PART B

SOLAR - GEOPHYSICAL DATA

ISSUED
JUNE 1958

U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

CRPL-F 166
PART B

NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

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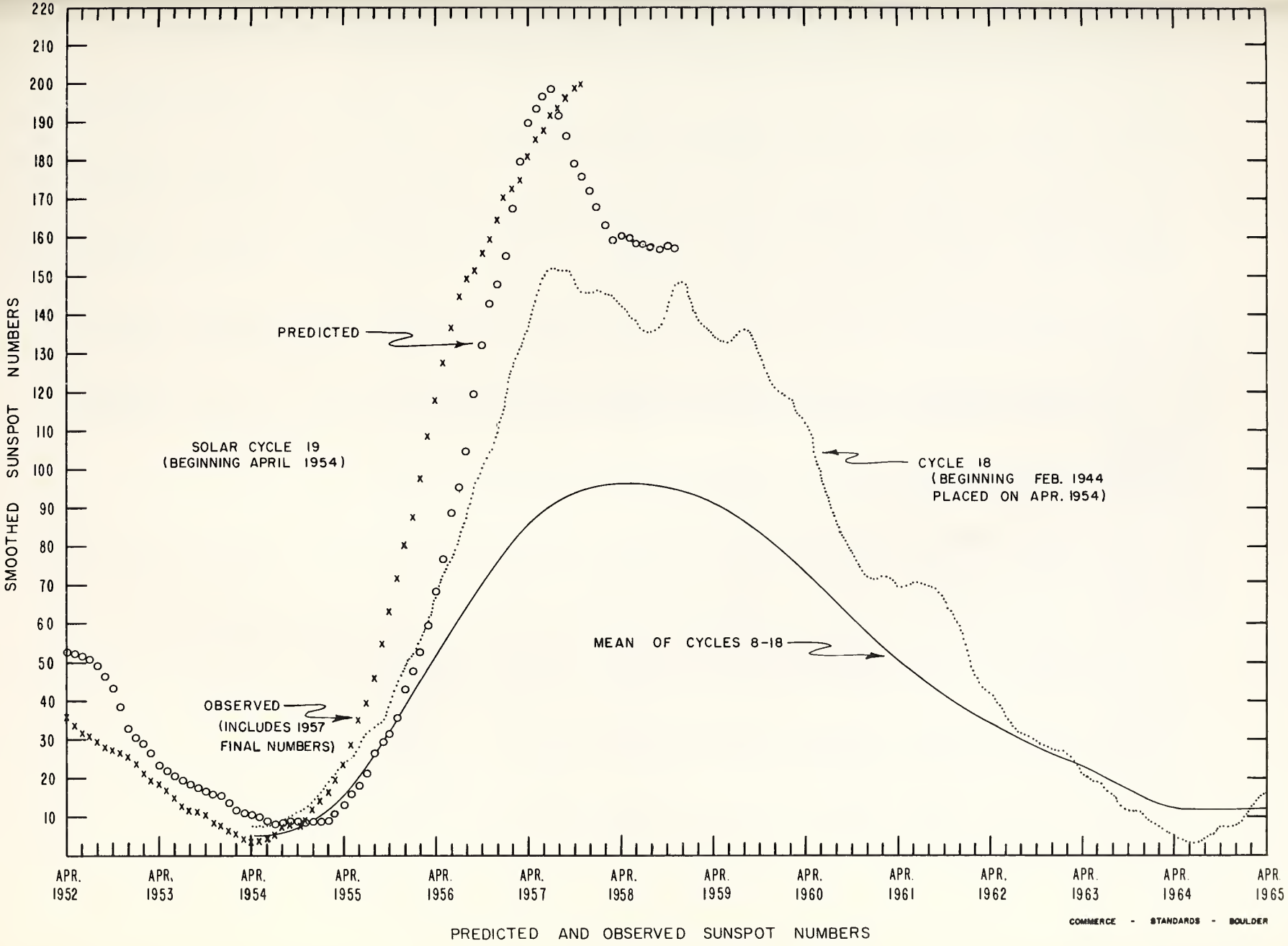
INTRODUCTION

The descriptive text is published quarterly or whenever context of the report is changed. The last issue in which the text appeared was CRPL-F164 Part B issued April 1958.

DAILY SOLAR INDICES

Apr. 1958	American Relative Sunspot Numbers R_A'
1	261
2	271
3	227
4	281
5	276
6	235
7	201
8	206
9	176
10	174
11	154
12	105
13	117
14	92
15	119
16	111
17	145
18	157
19	159
20	161
21	176
22	175
23	179
24	164
25	144
26	173
27	155
28	187
29	188
30	223
Mean:	179.7

May 1958	Zürich Provisional Relative Sunspot Numbers R_Z	Daily Values Solar Flux at 2800 Mc, Ottawa, Canada Flux
1	250	266
2	246	276
3	269	--
4	268	280
5	267	269
6	223	263
7	198	249
8	177	236
9	150	239
10	181	209
11	166	211
12	160	209
13	114	203
14	103	194
15	106	196
16	110	194
17	116	194
18	123	197
19	140	197
20	132	197
21	162	199
22	165	199
23	171	206
24	204	211
25	192	207
26	170	210
27	157	201
28	160	202
29	192	219
30	178	213
31	181	209
Mean:	175.2	218.5



PREDICTED AND OBSERVED SUNSPOT NUMBERS

Zürich Final Relative Sunspot Numbers

Day	1957 Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct	Nov.	Dec.
1	160	108	155	140	124	158	185	144	244	236	266	230
2	189	120	164	152	121	163	194	148	225	234	250	217
3	211	102	137	135	118	180	204	162	190	242	232	230
4	224	110	128	160	106	169	235	163	173	217	214	243
5	226	110	124	138	92	159	213	158	171	219	201	266
6	252	123	147	108	138	194	226	163	160	227	182	245
7	224	138	147	138	140	170	192	157	137	234	177	190
8	207	151	144	160	150	145	152	141	172	244	158	197
9	166	157	180	163	162	168	162	121	215	267	192	152
10	153	142	186	150	195	158	135	89	240	264	226	148
11	151	136	210	121	211	140	107	96	245	232	232	151
12	155	132	224	114	204	160	93	116	253	236	231	157
13	134	122	228	143	197	178	97	104	252	244	221	161
14	121	130	175	122	214	158	136	135	251	232	210	167
15	86	142	156	162	210	225	156	157	247	264	177	174
16	100	153	146	181	196	239	184	195	252	268	179	187
17	112	140	150	202	179	252	203	197	258	251	181	205
18	143	132	147	205	185	272	218	196	273	222	185	225
19	170	123	147	207	173	274	223	186	290	217	194	249
20	170	117	122	208	182	272	238	170	302	230	207	284
21	177	123	120	214	205	265	250	138	334	237	234	299
22	193	130	137	218	159	242	255	114	302	241	263	316
23	191	132	152	226	180	232	265	108	268	254	251	343
24	209	134	145	248	186	235	265	110	238	276	238	355
25	184	139	160	251	150	208	227	132	234	240	211	355
26	168	131	170	223	132	212	206	164	215	293	199	337
27	150	141	155	215	132	220	173	181	226	280	201	275
28	141	129	152	221	143	190	158	204	242	317	215	260
29	132		154	177	162	180	142	236	242	334	215	275
30	107		172	155	179	204	159	252	224	317	184	274
31	108		145		179		150	261		299		255
Mean:	165.0	130.2	157.4	175.2	164.6	200.7	187.2	158.0	235.8	253.8	210.9	239.4

CALCIUM PLAGE AND SUNSPOT REGIONS
MAY 1958

CMP May 1958	Lat	McMath Plage Number	Return of Region	Calcium Plage Data				Sunspot Data		
				CMP Values				CMP Values		
				Area	Int.	History, Age		Area	Count	History
01.2	N30	4527	4484	2200	2	ℓ⋀ℓ	3	220	1	ℓ — ℓ
01.3	S22	4528	4483	3500	3	ℓ — ℓ	2	460	11	ℓ ∧ ℓ
01.9	N23	4529	New	12000	3.5	ℓ — ℓ	1	1360	17	ℓ⌝ℓ
03.4	S15	4530	New	11000	3.5	ℓ ⌜ℓ	1	1650	34	ℓ⌝ ℓ
03.8	N30	4531	4488	2500	2	ℓ ∧ ℓ	5			
03.9	N15	4533	4490	1800	1.5	ℓ — ℓ	5			
05.3	N17	4534	4490	1000	1.5	ℓ \ d	5			
05.8	S14	4535	New	(500)	(1)	ℓ \ d	1			
06.2	S26	4536	4494	(300)	(1)	ℓ — d	3	(20)	(1)	b — d
06.3	N24	4541	New	500	3	b / ℓ	1	120	21	b ∧ d
06.5	N02	4539	New	1500	2.5	ℓ / ℓ	1	160	10	b ∧ ℓ
07.0	N14	4537	4493	1100	2	ℓ ⌞ℓ	3	200	1	ℓ — ℓ
07.7	N25	4538	4493	9300	3	ℓ — ℓ	3	700	15	ℓ⌝⌞ℓ
08.7	N09	4540	New	1600	2.5	ℓ ⋁ ℓ	1	290	4	b⌜ℓ
09.7	N22	4542	New	1200	2	ℓ — ℓ	1			
10.4	N15	4543	4498	4100	3	ℓ⌝⌞ℓ	3	290	2	ℓ⌝⌝ ℓ
10.5	S12	4554	New	(300)	(1.5)	b / ℓ	1	(20)	(1)	b — d
11.7	N14	4545	4498	1000	1.5	ℓ — ℓ	3			
11.7	S23	4544	New	300	1.5	ℓ⌝⌞ℓ	1			
12.4	N22	4546	4498	1300	1	ℓ — ℓ	3			
13.0	S23	4566	New	(700)	(2)	b — ℓ	1			
13.5	S07	4547	New	1600	2.5	ℓ⋁⌜ℓ	1	130	5	ℓ⌝⌝ d
13.8	N11	4550	New	300	1.5	b — d	1			
15.3	S20	4548	New	11000	3	ℓ — ℓ	1	1070	29	ℓ⌝⌝ ℓ
16.1	N21	4552	4506	2300	2	ℓ — ℓ	3	(100)	(2)	b — ℓ
17.4	N12	4551	4511	1000	2	ℓ \ d	2			
18.2	N24	4556	4507	1700	2	ℓ⌜ℓ	3	120	2	b⌜⌝ ℓ
18.9	S21	4553	4508	2800	2	ℓ⌞ℓ	2	240	1	ℓ — ℓ
19.7	N25	4562	4507	700	1.5	ℓ⌜⌝ ℓ	3			
19.9	S07	4555	4512	1800	2	ℓ⌞⌞ℓ	3	360	3	ℓ \ ℓ
20.4	N18	4558	4514	1000	1.5	ℓ⋁ ℓ	2			
20.6	S22	4565	New	500	2.5	b⌜⌜ℓ	1	50	1	b⌜⌜ℓ
20.7	N38	4557	New	3200	3.5	ℓ — ℓ	1	570	2	ℓ⌝⌝ d
22.2	N08	4563	4519	1400	3	ℓ⌟ ℓ	2	400	19	b ∧ ℓ
22.5	S12	4559	4517	2200	2	ℓ⌞⌞ℓ	3	(50)	(2)	b — d
23.1	S29	4569	4517	600	1	ℓ — ℓ	3	70	2	b — d
23.4	N10	4561	*	1800	2	ℓ⌝⌞ℓ	2	(10)	(1)	b — d
23.9	S19	4571	4520	700	1	ℓ — d	4			
24.1	N26	4560	4521	2200	2.5	ℓ⌞⌞ℓ	2	270	3	ℓ⌝⌞ℓ
24.6	S27	4570	4520	1300	1	ℓ — d	4			
24.7	S08	4572	New	500	2	b — ℓ	1			
25.0	N15	4564	4523	500	1.5	ℓ — ℓ	3	(50)	(1)	b — d
25.5	S21	4573	4524	1000	1.5	ℓ — ℓ	3			
25.7	N07	4575	New	900	2.5	b — ℓ	1	150	15	b ∧ d
26.1	N22	4568	4525	1600	2.5	ℓ — ℓ	5	20	2	b — d
27.9	N10	4574	4529	2100	2.5	ℓ⌜⌜ℓ	2	220	1	ℓ — ℓ
28.6	N25	4577	4529	5200	2.5	ℓ⌝⌝ ℓ	2	70	1	b⌜⌜ℓ
28.9	S25	4580	4528	2500	2	ℓ⌝⌝ d	3	10	1	b — d
30.3	N24	4578	4529	6500	3	ℓ — ℓ	2	160	6	ℓ / ℓ
30.3	S14	4579	4530	8000	3	ℓ ∧ ℓ	2	690	9	ℓ⌝⌞ℓ
31.6	S31	4584	New	500	2.5	b⌜ℓ	1	(20)	(3)	b — d

*Part of 4519, 4522

CORONAL LINE EMISSION INDICES

APRIL 1958

CMP Apr. 1958	North East Quadrant (observed 7 days earlier)				South East Quadrant (observed 7 days earlier)				South West Quadrant (observed 7 days later)				North West Quadrant (observed 7 days later)			
	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1
1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
3	105a	140a	x	x	120a	166a	18	48	x	x	x	x	x	x	x	x
4	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
5	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
6	x	x	x	x	x	x	x	x	77	110	x	x	176	242	x	x
7	x	x	x	x	x	x	x	x	54	66	8	12	161	200	41	60
8	190	300	38	84	79	212	32	60	55	72	24	33	220	320	58	90
9	x	x	x	x	x	x	x	x	x	x	x	x	181	244	x	x
10	141	194	x	x	60	66	x	x	63	76	11	15	120	137	36	45
11	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
12	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
13	127	151	x	x	74	104	x	x	x	x	x	x	x	x	x	x
14	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
15	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
16	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
17	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
18	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
19	167	268	x	x	83	112	x	x	x	x	x	x	103	161	x	x
20	155	222	x	x	93	126	x	x	x	x	x	x	x	x	x	x
21	96	117	34	55	74	94	19	27	x	x	x	x	x	x	x	x
22	127	147	68	126	124	198	32	66	x	x	x	x	x	x	x	x
23	159	202	x	x	140	266	x	x	x	x	x	x	x	x	x	x
24	121	156	27	58	158	209	35	79	x	x	x	x	x	x	x	x
25	x	x	x	x	x	x	x	x	106	154	x	x	104	138	x	x
26	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
27	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
28	x	x	x	x	x	x	x	x	107	123	x	x	123	160	x	x
29	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
30	x	x	x	x	x	x	x	x	112	158	32	71	108	145	x	x

COMMERCE - STANDARDS - BOULDER

\# = yellow line observed.
a = index computed from low weight data.
x = no observations.

CORONAL LINE EMISSION INDICES

MAY 1958

CMP May 1958	North East Quadrant (observed 7 days earlier)				South East Quadrant (observed 7 days earlier)				South West Quadrant (observed 7 days later)				North West Quadrant (observed 7 days later)			
	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1
1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
3	120	142	x	x	57	109	x	x	104	150	30	54	175	216	18	27
4	x	x	x	x	x	x	x	x	120	180	28	45	197	245	32	54
5	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
6	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
7	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
8	x	x	x	x	x	x	x	x	50	64	20a	42a	133	207	44a	66a
9	147	160	x	x	70	100	x	x	x	x	x	x	x	x	x	x
10	115	152	x	x	67	92	x	x	64	120	32	90	104	157	28	40
11	135	225	x	x	x	x	x	x	52	68	20	28	69	90	34	64
12	146	187	x	x	83	107	x	x	45	66	x	x	x	x	x	x
13	x	x	x	x	x	x	x	x	110	139	46	73	x	x	21	40
14	88	109	14	35	89	106	29	42	x	x	x	x	x	x	x	x
15	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
16	x	x	x	x	x	x	x	x	92	140	x	x	64	71	x	x
17	109	122	29	61	112	159	30	45	132	180	19	30	x	x	x	x
18	153	188	20	36	162	242	15	24	91	134	x	x	94	128	x	x
19	x	x	x	x	x	x	x	x	x	x	15a	33a	x	x	48a	64a
20	122	148	x	x	116	140	x	x	x	x	x	x	x	x	x	x
21	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
22	136	188	51a	84a	106	142	24a	41a	x	x	x	x	x	x	x	x
23	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
24	161	204	46	102	106	127	32	52	x	x	x	x	x	x	x	x
25	225	366	26	48	103	140	31	45	x	x	x	x	x	x	x	x
26	167	300	x	x	96	136	x	x	x	x	x	x	x	x	x	x
27	155	246	58	96	138	146	x	x	62a	88a	x	x	81a	90a	x	x
28	124a	152a	x	x	73a	113a	x	x	x	x	x	x	x	x	x	x
29	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
30	166	248	x	x	102	190	x	x	x	x	x	x	x	x	x	x
31	184	240	x	x	117	162	x	x	x	x	x	x	x	x	x	x

* = yellow line observed.
a = index computed from low weight data.
x = no observations.

SOLAR FLARES

MAY 1958

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME			LOCATION			DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT
					APPROX.		McMATH PLAGE REGION				TIME — UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ho	MAX. INT. %	
	May 1958	START	END	MAX. PHASE	LAT.	MER. DIST.										
WENDELSTEIN	01	0640 E	0700 D		S17	E22	4530	20 D	1				3.00			
UCCLE	01	0821	0853	0830	S17	E21	4530	32	1		0830	1.20				
WENDELSTEIN	01	0822	0913	0834	S17	E21	4530	51	1&				5.00			
ZURICH	01	0827	0900 D		S16	E21	4530	33 D	1&	2	0827		2.00			S-SWF
SCHAUINS	01	0834 E	0910 D		S15	E14	4530	36 D	1	2			3.00	2.30		
R O EDIN	01	0839 E	0907		S16	E19	4530	28 D	1	2	0841	2.00	2.20	1.52		-
UCCLE	01	0959	1016	1002	S24	E23	4530	17	1&	3	1002	3.00				
WENDELSTEIN	01	0954	1025		N24	E25	4529	31	1				4.00			
SCHAUINS	01	1004 E	1028		N24	E23	4529	24 D	1&	2			3.00	2.80		
ARCETRI	01	1005 E			N23	E22	4529		1&	3	1005	3.00	3.30			S-SWF
ONDREJOV	01	1011 E	1014 D		N23	E20	4529	3 D	1	1	1012			2.50		
WENDELSTEIN	01	1037 E	1105	1042	S17	E20	4530	28 D	1&				6.00			
UCCLE	01	1039	1056	1045	S17	E21	4530	17	1	4	1045	3.50	3.80			
SCHAUINS	01	1049 E	1055 D		S16	E19	4530	6 D	1	2			3.00	2.00		
ONDREJOV	01	1055 E	1057 D		S18	E19	4530	2 D	1&	1						
ZURICH	01	1059 E	1108 D		S17	E18	4530	9 D	1	2	1059		2.00			
MT WILSON	01	1343 E			S15	E15	4530		1							
MCMATH	01	1353	1503	1414	S17	E17	4530	70	1	1	1414	2.76	2.93			
SAC PEAK	01	1400	1450 U	1415	S16	E17	4530	50 D	1	2		2.80			18	Slow S-SWF
WENDELSTEIN	01	1408	1450	1416	S17	E18	4530	42	1&				5.00			
SCHAUINS	01	1419 E	1440 D		S16	E18	4530	21 D	1&	2			2.00	2.20		
WENDELSTEIN	01	1703	1734 D	1708	S19	E16	4530	31 D	2				8.00			
MCMATH	01	1806	1905	1817	S16	E28	4530	59	2	1	1817	5.20	5.98		79	
HAWAII	01	1814	1846	1818	S19	E26	4530	32	1&	3	1818	3.70	4.30			S-SWF
MT WILSON	01	1848 E			S15	E26	4530		1							
MCMATH	01	1910	1945	1914	S18	E12	4530	35	1&	1	1914	4.06	4.26			
MCMATH	01	2046	2120 D	2109 U	S18	E15	4530	34 D	2&	1	2110	11.32	12.00		78	
MCMATH	01	2059 E			S18	E15										
MT WILSON	01	2059	2112		S16	E16	4530	13	1							G-SWF
HAWAII	01	2102	2116	2110	S18	E12	4530	14	1	3	2110	2.10	2.20			
MCMATH	01	2115		2130	S20	E20										
MCMATH	01	2115	2228 D	2135 U	S20	E20	4530	73 D	3	1	2145	19.48	21.04			
MCMATH	01	2128 E		2155	S20	E20										Slow S-SWF
MT WILSON	01	2119	2241		S16	E16	4530	82	1&							
HAWAII	01	2134 E	2208		S20	E12	4530	34 D	2	2	2158	4.90	5.40			
SAC PEAK	01	2138 E	2222 U	2140	S19	E14	4530	44 D	2	1		8.50			17	
SAC PEAK	01	2327	2350	2335	N20	E16	4529	23	1	1		1.80			25	S-SWF
MT WILSON	01	2330	2355		N19	E09	4529	25	1							
MT WILSON	01	2342	2350		N19	W95	4519	8	1							
MT WILSON	01	2354	0032		S15	E15	4530	38	1							
HAWAII	02	0148	0200 D	0152	N24	W03	4529	12 D	1	2	0152	2.30	2.60			
NIZAMIAH	02	0546 E	0548 D		S14	E07	4530	2 D	1	1	0546	3.04	3.11	1.30		S-SWF
WENDELSTEIN	02	0647	0703		S17	E11	4530	16	1				3.00			
WENDELSTEIN	02	0736	0754		S19	E08	4530	18	1&				5.00			
ZURICH	02	0738 F	0750		S16	F07	4530	12 D	1	2	0738		3.00			
WENDELSTEIN	02	0754	0818	0805	S17	F08	4530	24	1				4.00			S-SWF
ZURICH	02	0756	0827		S15	E06	4530	31	1	2	0756		3.00			
ZURICH	02	0808	0821		N31	W32	4525	13	1	2	0808		1.00			
UCCLE	02	0819	0857	0831	S16	E11	4530	38	2	4	0831	5.80				
MEUDON	02	0824	0905		S18	E14	4530	41	1							
WENDELSTEIN	02	0828	0853	0832	S18	E12	4530	25	2				9.00			S-SWF
ARCETRI	02	0833 E	0849 D		S17	E09	4530	16 D	1	3	0833	3.80	3.90			
ONDREJOV	02	0847 E	0905		S17	E14	4530	18 D	1	2	0850			2.40		
														PAGE	1	

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OBSERVATORY	DATE May 1958	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — D T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
UCCLE	02	0833	0904	0857	N23	E10	4529	31	1	4	0857	2.20				
WENDELSTEIN	02	0833	0906 D		N23	E11	4529	33 D	1&				6.00			
UCCLE	02	0931	0935	0932	S16	E10	4530	4	1	4	0932	2.80				
ARCETRI	02	0947 E			S18	E06	4530		1	3	0947	3.30	3.40			
WENDELSTEIN	02	0947	1044 D	0954	S18	E11	4530	57 D	2&				17.00			
CAPRI S	02	0949	1037 D		S18	E07	4530	48 D	1	3	0954	3.00	3.30			
MEUDON	02	0949	1039 D		S18	E14	4530	50 D	2							
ZURICH	02	0950	1046		S17	E09	4530	56	2	2	0950		10.00			
UCCLE	02	0950	1103	0954	S16	E10	4530	73	2	4	0954	6.80				
ONDREJOV	02	0952 E	1059		S20	E10	4530	67 D	2	2	0954			3.30		
SCHAUINS	02	0957 E	1030		S16	E07	4530	33 D	2	2			11.00	2.60		
STOCKHOLM	02	1005 E	1015 D		S19	W03	4528	10 D	1		1013	3.00	3.20			
MCMATH	02	1056 E	1125 D		S20	E08	4530	29 D	2&	1	1058	10.72	11.15			
SCHAUINS	02	1112 E	1121		S18	W06	4530	9 D	1	2			3.00	1.70		
MCMATH	02	1140	1155	1144	S20	E08	4530	15	1	1	1144	3.25	3.38		70	
ONDREJOV	02	1143 E	1151		S21	E05	4530	8 D	1	3	1144			2.60		
WENDELSTEIN	02	1205 E	1222 D		S17	E09	4530	17 D	1				3.00			
ZURICH	02	1305 E	1309		N31	W14	4527	4 D	1	2	1305		2.00			
ZURICH	02	1305 E	1325		N24	E07	4529	20 D	2	2	1305		7.00			
MCMATH	02	1335	1350	1340	N31	W36	4525	15	1	1	1340	1.95	2.83			
MEUDON	02	1413	1430		N30	W35	4525	17 D	1							
MCMATH	02	1415	1430	1421	N31	W36	4525	15	1	1	1421	2.28	3.30		61	
MCMATH	02	1505	1520	1509	N25	E05	4529	15	1&	1	1509	5.68	6.36		61	
ZURICH	02	1503	1518		N31	W36	4525	15	1	2	1503		2.00			
USNRL	02	1503	1543	1507	N28	W36	4525	40	1	1	1507	.68	1.01		120	
OTTAWA	02	1505	1530	1507	N28	W37	4525	25	1	3	1507	1.68	2.52			
ONDREJOV	02	1516 E	1532 D		N27	W38	4525	16 D	1	3	1517			2.20		
MEUDON	02	1613	1645		S17	W12	4528	22	1							
MCMATH	02	1614	1655	1618	S17	W08	4528	41	1	1	1618	3.00	3.15		64	
SCHAUINS	02	1615 E	1624		S16	W11	4528	9 D	1	2			3.00	2.00		
ONDREJOV	02	1619 E	1636		S18	W09	4528	17 D	1	3	1620			2.50		
WENDELSTEIN	02	1620	1651		S18	W07	4528	31	1				3.00			
MEUDON	02	1628	1645		S15	E02	4530	17	1							
MCMATH	02	1629	1658	1635	S16	E03	4530	29	1&	1	1635	4.06	4.18		69	
ONDREJOV	02	1631	1643		S17	E03	4530	12	1	3	1633			2.10		
WENDELSTEIN	02	1632	1654		S17	E02	4530	22	1				4.00			
ONDREJOV	02	1656 E	1701 D		N18	W15	4529	5 D	1	1	1659			2.00		
MCMATH	02	1845	1920	1850	N30	W40	4525	35	1	1	1850	2.19	3.42		82	
MCMATH	02	1852	1935	1904	N24	E02	4529	43	1	1	1904	3.09	3.46		66	
MCMATH	02	1950	2025 D	2000	N24	E02	4529	35 D	1&	1	2000	3.57	4.00		71	
MCMATH	02	2013	2030 D	2020	N26	E65	4538	17 D	1	1	2020	2.19	5.26			
MCMATH	02	2048	2145 D	2115	N24	E02	4529	57 D	1&	1	2115	3.73	4.18		64	
MCMATH	02	2153	2203 D	2157	N30	W40	4525	10 D	1	1	2157	1.79	2.79		72	
ONDREJOV	03	0555 E	0610		N20	W23	4529	15 D	1	2	0556			2.90		S-SWF
ONDREJOV	03	0636 E	0642		N25	E58	4538	6 D	1	3	0637			2.50		
ONDREJOV	03	0655 E	0705		N27	W40	4525	10 D	1	3	0701			2.30		
SCHAUINS	03	0658 E	0710		N27	W41	4525	12 D	1&	2			5.00	2.10		
ONDREJOV	03	0746 E	0809 D		N17	E50	4538	23 D	1	2	0750			2.20		
ATHENS	03	0747	0758 D		N18	E46	4538	11 D	1&	3		3.20	5.10			
ZURICH	03	0750	0835 D		N17	E47	4538	45 D	2	3	0750		10.00			
SCHAUINS	03	0753 E	0815		N19	E50	4538	22 D	2	2			10.00	2.30		
CAPRI S	03	0754 E	0825 D		N18	E48	4538	31 D	1	3	0800	2.00	3.20			
MEUDON	03	0821 E	0845		N16	E50	4538	24 D	2				8.00			
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OBSERVATORY	DATE May 1958	OBSERVED UNIVERSAL TIME START	OBSERVED UNIVERSAL TIME END	OBSERVED UNIVERSAL TIME MAX. PHASE	LOCATION APPROX. LAT.	LOCATION APPROX. MER. DIST.	LOCATION McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
UCCLE	03	0838 E	0838 D		N20	E60	4538			1						
UCCLE	03	0852	0910	0855	S15	E00	4530	18	1	1	0855	3.00				
ARCETRI	03	0857 E	0908 D		S15	E01	4530	11 D	1	3	0857	3.80	3.80			
SCHAUINS	03	0859 E	0920		S15	W02	4530	21 D	2-	2			11.00	2.20		
ZURICH	03	0905 E	0946		S16	W01	4530	41 D	2	3	0905		10.00			
ZURICH	03	0905 E	0917		N29	W46	4525	12 D	1	3	0905		2.00			
SCHAUINS	03	1008 E	1015		S15	W06	4530	7 D	1	2			3.00	3.20		
ZURICH	03	1015 E	1029		N28	W46	4525	14 D	1	3	1015		2.00			
UCCLE	03	1022 E			N30	W50	4525			2						S-SWF
UCCLE	03	1022 E	1025 D	1025	S17	W59	4524	3 D	1	2						
SCHAUINS	03	1218 E	1224		S15	W07	4530	6 D	1	2			3.00	2.30		
SAC PEAK	03	1300	1435	1330	S16	W04	4530	95	2	1		7.90			20	
ONDREJOV	03	1305 E	1427		S17	W02	4530	82 D	2	1	1342			3.00		
CAPRI S	03	1306 E	1411		S18	E00	4530	65 D	1	3	1331	3.50	3.50			
R O HERST	03	1330 E	1430	1334	S15	W05	4530	60 D	1&	2	1334	3.00	3.10	2.70	100	
WENDELSTEIN	03	1336 E	1356 D		S16	W02	4530	20 D	2&				16.00			Slow S-SWF
STOCKHOLM	03	1336 E	1415 D		S14	W01	4530	39 D	2		1358	5.00	5.00			
R O EDIN	03	1340 E	1438		S16	W02	4530	58 D	2	3	1341	11.00	11.20	1.94		
MEUDON	03	1401 E	1425		S17	E04	4530	24 D	1				4.00			
SCHAUINS	03	1420 E	1430		S15	W01	4530	10 D	1	2			3.00	2.30		
ONDREJOV	03	1502	1507	1503	N26	E54	4538	5	1	3	1503			2.30		
ONDREJOV	03	1617 E	1622		S16	W12	4530	5 D	1	2	1618			2.10		Slow S-SWF
SAC PEAK	03	2112	2137 D	2127	S17	W03	4530	25 D	1	2		3.10			16	
SAC PEAK	03	2334 E	2342 D	2334 E	N21	W31	4529	8 D	1	1		2.30			16	
ONDREJOV	04	0508 E	0549		N21	W17	4529	41 D	1	2	0532			2.30		
ATHENS	04	0710 E	0730		N21	W36	4529	20 D	1	3		1.80	2.40			
SCHAUINS	04	0717 E	0722		N22	W36	4529	5 D	2	2			5.00	2.40		
CAPRI S	04	0743 E	0752 D		N19	W23	4529	9 D	1	3	0745	1.20	1.40			S-SWF
UCCLE	04	0902	0920	0910	S18	W75	4524	18	1	3	0910	2.20	3.30			
SCHAUINS	04	0908	0915	0909	S19	W66	4524	7	1	2			2.00	3.50		
ZURICH	04	0945	0952		N27	E43	4538	7	1	3	0945		2.00			
UCCLE	04	1130	1150	1145	N22	W74	4525	20	1	3	1145	1.90	2.80			
ONDREJOV	04	1144 E	1147 D		N00	E26	4539	3 D	1	1	1147			2.00		
SAC PEAK	04	1302	1437	1325	N23	W27	4529	95	1	2		2.80			18	
USNRL	04	1309 E	1356		N25	W30	4529	47 D	1&	2	1312	2.26	3.05	1.00	119	
USNRL	04	1355	1427	1405	N22	W23	4529	32	1	2	1405	.68	.82	1.00	190	
ONDREJOV	04	1358	1425	1401	N20	W24	4529	27	1	2	1401			2.60		
OTTAWA	04	1402 E			N21	W24	4529		1	1	1406	2.09	2.55			
SCHAUINS	04	1402 E	1420		N21	W23	4529	18 D	1&	2			5.00	2.70		
USNRL	04	1431	1514	1433	N23	W21	4529	43	1	2	1433	1.35	1.66		99	
MT WILSON	04	1643	1655		N19	W32	4529	12	1							
ONDREJOV	04	1646 E	1652 D		N20	W29	4529	6 D	1&	2	1647			4.90		S-SWF
SCHAUINS	04	1647 E	1652		N19	W28	4529	5 D	1	2			2.00	4.30		
ONDREJOV	04	1655 E	1658 D		S18	W26	4530	3 D	1	2	1658			2.20		
MCMATH	04	1952 E			S09	W25	4530		1&							
MCMATH	04	2003 E			S09	W25	4530		1							
HAWAII	04	2330	2332 D	2330	S14	W28	4530	2 D	1	1	2330	2.30	2.60			
HAWAII	05	0012	0036 D	0016	S14	W32	4530	24 D	1	1	0016	2.30	2.70			
MT WILSON	05	0012	0043		S15	W30	4530	31	1							S-SWF
MT WILSON	05	0221 E			S15	W29	4530		1							
NIZAMIAH	05	0407	0435	0415	S15	W32	4530	28	1&	3	0415	3.65	4.38	2.60		S-SWF
UCCLE	05	0703 E			N27	W78	4525		1	3						

COMMERCE - STANDARDS - BOULDER

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OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME			LOCATION			DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT
					APPROX.		McMATH PLAGE REGION				TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	
	May 1958	START	END	MAX. PHASE	LAT.	MER. DIST.										
UCCLE	05	0710			S15	W32	4530		1	2	0712	2.00				
ZURICH	05	0800	0823		S17	W31	4530	23	1	3	0800		3.00			
ONDREJOV	05	0800	0824		S17	W30	4530	24	1	3	0811			2.30		
UCCLE	05	0801	0817	0805	S16	W33	4530	16	1	2	0805	2.00				
WENDELSTEIN	05	0804	0823		S16	W31	4530	19	1				4.00			
ONDREJOV	05	0856	0911 D		S17	W26	4530	15 D	1	3	0900			2.00		
WENDELSTEIN	05	0906	1021		S17	W20	4530	15	3				24.00			
ONDREJOV	05	0908	0945	0914	S18	W22	4530	37	2	3	0914			3.30		
STOCKHOLM	05	0908 E	0959 D		S15	W25	4530	51 D	2		0928	5.00	5.80			
UCCLE	05	0909	0942	0913	S17	W23	4530	33	1	3	0913	3.50				S-SWF
UCCLE	05	0909	0942	0928	S18	W27	4530	33	2	3	0928	6.00				
SCHAUINS	05	0911 E	0943 D	0917	S15	W25	4530	32 D	2	2	0917		10.00	4.20		
WENDELSTEIN	05	0918	0926		S16	W32	4530	8	1				3.00			
CAPRI S	05	0924 F	0942 D		S14	W24	4530	18 D	1	2	0930	3.00	3.30			
ZURICH	05	0945	1010		S12	W33	4530	25	1	2	0945		1.00			
ZURICH	05	0945 E	1012		S17	W25	4530	27 D	2	2	0945		7.00			
WENDELSTEIN	05	0950 F	1036		S15	W25	4530	46 D	1&				7.00			
ZURICH	05	0954	1036 D		S17	W32	4530	42 D	1&	2	0954		7.00			Slow S-SWF
ONDREJOV	05	1014	1038	1028	S16	W33	4530	24	2	3	1028			6.90		
SCHAUINS	05	1022 E	1028 D		S15	W32	4530	6 D	1&	2	1024		4.00	6.40		
STOCKHOLM	05	1026 E	1028 D		S13	W34	4530	2 D	1&		1026	4.50	5.40			
ONDREJOV	05	1205	1323	1228	S16	W34	4530	18	1&	3	1228			3.00		
OTTAWA	05	1207	1318 D	1224	S16	W36	4530	71 D	1&	2	1224	3.65	4.65			
WENDELSTEIN	05	1210	1402		S16	W35	4530	112	1&				7.00			
SCHAUINS	05	1217 E	1238 D		S15	W36	4530	21 D	1&	2			5.00	3.70		
NEDERHORST	05	1225 E	1235		S16	W34	4530	10 D	2							S-SWF
MCMATH	05	1227 E	1248		S16	W38	4530	21 D	1	1	1230	2.76	3.51		61	
CAPRI S	05	1236 E	1251 D		S17	W31	4530	15 D	1	2	1239	1.80	2.20			
ZURICH	05	1241 E	1256		S16	W36	4530	15 D	1	2	1242		3.00			
ARCETRI	05	1248 E	1305 D		S16	W38	4530	17 D	1	3	1305	2.10	2.70			
MCMATH	05	1253	1313	1306	S16	W38	4530	20	1	2	1306	2.60	3.30		67	
ZURICH	05	1241 E	1251		N01	E13	4539	10 D	1	2	1243		1.00			
MCMATH	05	1315	1413	1333	S16	W38	4530	58	1	2	1333	2.43	3.09		76	Slow S-SWF
ONDREJOV	05	1330	1355	1332	S17	W36	4530	25	1&	3	1332			2.50		
MCMATH	05	1413	1500	1430	N23	E30	4538	47	1	1	1430	3.08	4.04		63	
MCMATH	05	1819	1840	1822	S16	W41	4530	21	1	1	1822	2.03	2.66		61	
MCMATH	05	1912	2020 D	1940	N24	W50	4529	68 D	2&	1	1945	5.52	9.61		73	
MCMATH	05	1925			N24	W50										
MT WILSON	05	1915	2005		N21	W50	4529	50	1							S-SWF
MT WILSON	05	1930	1959		N19	W47	4529	29	1							
MCMATH	05	1952	2010	1958	S16	W30	4530	18	1	1	1958	2.44	2.85		69	
MCMATH	05	2025	2115	2035 U	N24	W50	4529	50	1&	1	2035	2.44	4.24		64	
MT WILSON	05	2032	2109		S15	W36	4530	37	1&							
MCMATH	05	2033	2115	2036	S14	W41	4530	42	2	1	2036	3.89	5.18		95	S-SWF
MCMATH	05	2033			S18	W24					2036	2.35	2.66			
MT WILSON	05	2142	2157		S18	W40	4530	15	1							
MITAKA	06	0129	0134 D		N16	W60	4529	5 D	1&	1	0130	1.84	3.82	2.85	134	
MT WILSON	06	0130	0135		N12	W66	4529	5	1							
MITAKA	06	0210 E	0229		S19	W34	4530	19 D	2	1	0213	7.57	9.00	2.78	165	Slow S-SWF
SYDNEY	06	0325	0405		S18	W37	4530	40	2							S-SWF
MITAKA	06	0336 E	0347 D		S14	W36	4530	11 D	2	1	0337	14.60	17.50	2.62	140	
STOCKHOLM	06	1325	1348		N11	E51	4543	23	2		1330	4.10	7.00			
OTTAWA	06	1325	1400		N14	E51	4543	35	2	2	1335	4.52	7.74			Slow S-SWF

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OBSERVATORY	DATE May 1958	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
CAPRI S	06	1326 E	1344		N16	E54	4543	18 D	1&	3	1336	2.20	4.00			
R O EDIN	06	1330 E	1356		N12	E52	4543	26 D	2	2	1335	5.00	8.70	2.56		
ATHENS	07	0609	0628		N27	W84	4529	19	1&	4		.70	4.90			
UCCLE	07	0934 F			N23	W60	4529		1	2						
ONDREJOV	07	1219 E	1220 D		N26	E02	4538	1 D	1	1	1220			2.20		
MCMATH	07	1654	1706	1656	N19	W72	4529	12	2	1	1656	1.95	5.69		66	
SAC PEAK	07	1654 E	1707 D	1657	N26	W68	4529	13 D	1	1		2.40			15	
SCHAUINS	07	1655 E	1707		N26	W78	4529	12 D	1&	2			3.00	2.60		
MCMATH	07	2007	2020	2010	S22	W76	4528	13	1	1	2010	1.78	3.30		70	
NIZAMIAH	08	0549	0556	0551	N19	W73	4529	7	1	3	0551	.61	2.28	1.80		
WENDELSTEIN	08	0650 F	0714		S14	F86	4548	24 D	1				3.00			S-SWF
SCHAUINS	08	0655 E	0658 D		N21	W82	4529	3 D	1	1			3.00	2.50		
WENDELSTEIN	08	0737	0753 D		N27	W74	4529	16 D	1				3.00			Slow S-SWF
ZURICH	08	0750 F	0812		S06	F80	4547	22 D	1	1	0750		2.00			
ZURICH	08	0750 E	0830 D		S15	W72	4530	40 D	1	1	0750		5.00			
WENDELSTEIN	08	0830	0846		S15	E71	4548	16	1&				2.00			
WENDELSTEIN	08	0910	0932		N27	W75	4529	22	1				3.00			S-SWF
WENDELSTEIN	08	1131 E	1234 D		S16	E25		63 D	1				4.00			
WENDELSTEIN	08	1218	1233		N12	E05	4540	15	1				3.00			
ZURICH	08	1231	1245		N07	W25	4539	14	1	2	1231		3.00			
MT WILSON	08	2125	2143		N15	E20	4543	18	1							
ONDREJOV	09	0648 E	0654 D		N09	W05	4540	6 D	1	3	0649			1.90		
WENDELSTEIN	09	1407 E	1434 D		N18	E08	4543	27 D	1				3.00			
WENDELSTEIN	09	1409 E	1436 D		S25	W90	4530	27 D	1				3.00			
ONDREJOV	09	1436 E	1448		N18	E67		12 D	1	3	1430			2.40		
SAC PEAK	09	1440	1555	1505	N23	W42	4541	75	1	2		2.10			15	
USNRL	09	1446	1545	1505	N23	W42	4541	59	1	2	1505	1.58	2.43	1.00	85	
SCHAUINS	09	1500 E	1512		N23	W38	4541	12 D	1	2			4.00			
USNRL	09	1521	1539	1522	S16	E85	4548	18	1	2	1522	.68	4.80		76	
SCHAUINS	10	0844 E	0931		S19	E69	4548	47 D	1&	2			4.00	5.00		S-SWF
UCCLE	10	0902	0931	0906	S20	E75	4548	29	1	3	0906	2.20	3.30			
DUNSINK	10	0943 E	1006		S03	W25		23 D	1		0943	2.50		1.20		
USNRL	10	1322	1346	1322	S21	E66	4548	24	1	2	1322	.85	2.16		76	
MCMATH	10	1710	1721	1714	S22	E64	4548	11	1	1	1714	1.22	2.89			
MCMATH	10	1710		1719	S22	E64					1719					
MCMATH	10	2011	2025	2016	S22	E62	4548	14	1	1	2016	1.06	2.51		64	
WENDELSTEIN	11	0736 F	0805 D		N20	W07	4543	29 D	1				4.00			
SCHAUINS	11	0744 F	0755		N20	W11	4543	11 D	1	2			2.00	1.90		
ONDREJOV	11	0749 E	0756 D		N08	W21	4540	7 D	1	3	0751			2.50		
ZURICH	11	1000 E	1027		N25	W49	4538	27 D	2	2	1000		10.00			
ZURICH	11	1441 F	1453		S18	E49	4548	12 D	1	2	1441		2.00			
SAC PEAK	11	1725	1812	1730	N20	E06	4545	47	1	2		2.80			18	
ZURICH	12	0805	0819		S19	E42	4548	12	1	1	0805		2.00			
ZURICH	12	0843	0855		S21	E55	4548	12	1	1	0843		2.00			
WENDELSTEIN	12	1058 E	1112 D		S21	E43	4548	14 D	1				3.00			
ONDREJOV	12	1058 E	1114		S21	E42	4548	16 D	1	2	1103			2.30		
OTTAWA	12	1406	1408 D	1408	S18	E39	4548	2 D	1&	3	1408	2.32	3.08			
UCCLE	12	1406	1420	1408	S18	E43	4548	14	1	3	1408	2.20				

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		START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	McMATH PLAGE REGION				TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	
USNRL	May 1958															
MCMATH	12	1406	1433	1407	S19	E40	4548	27	1	2	1407	.79	1.05		124	
MITAKA	12	1659	1717	1704	N09	W45	4540	18	1	1	1704	2.03	2.86		60	
MITAKA	12	2348 E	2405	2352	S20	E35	4548	17 D	2&	1	2352	7.57	9.85	2.74	227	
	12	2350	2404	2350	S20	E27	4548	14	1	1	2401	.89	1.06	1.89	149	
MITAKA	13	0027	0036	0029	N09	W53	4540	9	1	1	0029	1.84	3.12	2.16	149	
MITAKA	13	0405	0422		S19	E31	4548	17	1	1	0410	.89	1.13	1.78	120	
UCCLE	13	0918 E	1008 D	1008	S05	E85	4555	50 D	1&	1	1008					
USNRL	13	1204 E	1227		S06	E77	4555	23 D	1	2	1205	.62	2.22		73	
WENDELSTEIN	13	1217	1248 D		S09	E77	4555	31 D	1&				5.00			
USNRL	13	1621	1634	1622	S17	E15	4548	13	1	2	1622	1.19	1.27		154	
SAC PEAK	13	1800	1812	1802	S22	E61	4553	12	1	2		2.10			15	
USNRL	13	1801	1824	1802	S22	E61	4553	23	1	2	1802	1.54	3.25		76	
UCCLE	14	0959	1040	1010	S07	E67	4555	41	1	2	1010	2.20	3.30			
CAPRI S	14	1007 E	1031 D		S08	E66	4555	24 D	1	3	1016	1.00	2.40			
MCMATH	14	1451	1530 D	1513	N16	W69	4542	39 D	1	1	1513	.97	2.84			
USNRL	14	1802	1821	1808	N42	E85	4557	19	1&	2	1808	1.24	8.84		56	
SAC PEAK	14	1935 E	1950 U	1935 E	S08	E59	4555	15 D	1	2		2.90			18	
SAC PEAK	15	1455	1542	1502	S08	E50	4555	47	1	2		2.40			18	
MT WILSON	15	1500	1524		S06	E52	4555	24	1							
USNRL	15	1501 E	1550 D		S08	E52	4555	49 D	1	1	1507	1.73	2.83			G-SWF
MCMATH	15	1533 E	1601 D		S10	E52	4555	28 D	1	1	1547	2.19	3.42			
MCMATH	15	1714	1718 D	1715	S07	W28	4547	4 D	1	1	1715	2.12	2.39		58	
WENDELSTEIN	16	0826	0852 D		S22	W04	4548	26 D	1				4.00			
SAC PEAK	16	1850	1907 D	1900	N24	E90	4560	17 D	1	1		2.10			20	
MCMATH	16	1851	1926	1856	N23	E90	4560			2						
ABASTUMANI	17	0638			S21	W20	4548									
MOSCOW	17	0746 E	0800	0746	S21	W24	4548	14 D	1&							
UCCLE	17	0945	1002	0953	S23	W22	4548	17	1	1						
UCCLE	17	1026	1035		S20	W36	4548	9	1	1						
MCMATH	17	1310	1325	1316	S13	W37	4548	15	1	2	1316	1.95	2.53		65	
SAC PEAK	17	1340	1425	1400	S20	W37	4548	45	1	1		2.70			18	
MCMATH	17	1347 E	1420	1357	S13	W37	4548	33 D	1	1	1357	2.28	2.96		70	Slow S-SWF
SCHAUINS	17	1509 E	1550 D		S17	W37	4548	41 D	1&	2			4.00	3.00		
ZURICH	17	1659 E	1713 D		S18	W38	4548	14 D	1	3	1659		2.00			
SCHAUINS	17	1703 E	1717 D		S17	W37	4548	14 D	1	1			4.00	1.70		
ZURICH	17	1708 E	1713 D		N10	E64	4561	5 D	1	3	1708		1.00			
MCMATH	17	1741 E	1755	1745	S13	W38	4548	14 D	1	1	1745	2.84	3.72		73	
MCMATH	17	1840	1920		S13	W38	4548	40	1	1	1901	2.60	3.40		72	
MT WILSON	17	2136	2212		S17	W35	4548	36	1							G-SWF
MITAKA	18	0124 E	0139	0128	S43	W15	4548	15 D	1	2	0124	1.78	2.52	1.99	115	
MITAKA	18	0332 E	0339		S36	W19	4548	7 D	1	1	0332	1.78	2.18	1.92	98	
MITAKA	18	0356 E	0411	0403	S37	W19	4548	15 D	1	1	0403	1.34	1.65	2.35	120	
USNRL	18	1137 E	1205	1139	N18	W28	4552	28 D	1	3	1139	1.70	2.08		95	
CAPRI S	18	1404 E	1424 D		N38	E28	4557	20 D	1	2	1407	1.80	2.50			
SAC PEAK	18	1408 E	1450	1408 E	N41	E32	4557	42 D	1	2		1.90			18	
ZURICH	18	1540 E	1638		N28	W76	4546	58 D	1	2	1540		3.00			
ZURICH	18	1602 E	1607		S24	W73	4566	5 D	1	2	1602		2.00			
ZURICH	18	1617 E	1638		S16	W54	4548	21 D	1	2	1617		1.00			

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		START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	McMATH PLAGE REGION				TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	
	May 1958															
MT WILSON	18	1918	1927		S18	W42	4548	9	1							
MT WILSON	18	2057	2113		S17	W52	4548	16	1							
MT WILSON	18	2127	2153		S27	W21	4548	26	1							
MT WILSON	18	2221	2230		N22	E59	4560	9	1							
SYDNEY	19	0425 E	0505		S16	W58	4548	40 D	2							Slow S-SWF
MEUDON	19	1052	1058	1058	S15	W58	4548	6 D	2				15.00			
CAPRI S	19	1114 E	1126 D		S20	W52	4548	12 D	1	2	1120	2.00	3.60			
MCMATH	19	1124 E	1200 D		S14	W56	4548	36 D	1	1	1125	3.01	5.62		56	
UCCLE	19	1233			S24	W90	4548		1	2						
ONDREJOV	20	0436 E	0449		S17	W62	4548	13 D	1	3	0438			2.90		
ONDREJOV	20	0653 E	0701		N22	E44	4560	8 D	1	3	0655			2.40		
CAPRI S	20	0710 E	0732 D		S10	W72	4548	22 D	1	2	0715	1.00	3.40			
ONDREJOV	20	0712 E	0720		S19	W73	4548	8 D	1	3	0715			2.40		
ZURICH	20	0814	0831		N21	E42	4560	17	1	3	0814		5.00			
UCCLE	20	0820	0910	0825	N38	E13	4557	50	1	3	0825	3.40				
UCCLE	20	0824	0905	0853	S08	W12	4555	41	1	2	0853	2.20				
UCCLE	20	0823	0912	0837	S18	W70	4548	49	1	2	0837	2.20	3.10			
ONDREJOV	20	0829 E	0836		S17	W69	4548	7 D	1	3	0831			2.10		
ZURICH	20	0831 E	0846		S16	W71	4548	15 D	1	3	0831		3.00			
WENDELSTEIN	21	0622 E	0708		N09	F16	4563	56 D	1&				6.00			
ONDREJOV	21	0623 E	0631		N07	E14	4563	8 D	1	3	0624			2.30		
WENDELSTEIN	21	0646	0726 D		N23	E29	4560	40 D	1				3.00			
ONDREJOV	21	0857 E	0902 D		N23	E27	4560	5 D	1	3	0857			2.10		
UCCLE	21	0925	0945		N08	E12	4563	20	1	2	0930	2.30				
ONDREJOV	21	1122 E	1135		N07	E11	4563	13 D	1	3	1123			2.60		
WENDELSTEIN	21	1125 E	1132 D		N08	E13	4563	7 D	1				3.00			
CAPRI S	22	0910 E	1028 D		N08	W01	4563	78 D	1	1	1020	4.00	4.00			
UCCLE	22	0920	1019	0932	N08	E00	4563	59	1&	3	0932	4.50				
SAC PEAK	22	1250 E	1405	1254	N09	W03	4563	75 D	1	2		3.60			16	
MCMATH	22	2139	2155	2141	N21	E90	4578	16	1	1	2141					
WENDELSTEIN	23	0756	0816		N20	E80	4578	20	1&				6.00			
STOCKHOLM	23	0758 E	0805		N18	E78	4578	7 D	1		0801	1.30	5.00			
ZURICH	23	0758	0836		N19	E79	4578	38	1&	3	0810		5.00			
CAPRI S	23	0800 E	0807		N24	E75	4578	7 D	1&	3	0802	1.50	6.80			
MEUDON	23	0858	0913		N22	E80	4578	15	1							
ZURICH	23	1228 E	1254		S24	W41	4565	26 D	1	3	1228		3.00			
CAPRI S	23	1250 E	1410 D		S24	W37	4565	80 D	1	3	1345	2.00	3.00			
OTTAWA	23	1413 E	1417		S24	W46	4565	4 D	1&	3	1414	1.33	2.07			
MCMATH	23	1855	1910	1900	N20	W05	4560	15	1	1	1900	2.60	2.81		58	
MT WILSON	23	2306	2320		N23	E67	4578	14	1							
ONDREJOV	24	0919	0925	0920	S26	E52	4580	6	1	3	0920			2.20		
ONDREJOV	24	1048 E	1055		S25	W51	4565	7 D	1	3	1049			2.30		
MCMATH	24	1203	1220	1208	N13	W16	4561	17	1	1	1208	2.11	2.26		70	
WENDELSTEIN	24	1203	1225 D		N12	W16		22 D	1				4.00			
ONDREJOV	24	1205 E	1216		N10	W17	4561	11 D	1	3	1208			3.50		
USNRL	24	1453	1535 D	1512	S16	E35	4576	42 D	1	2	1507	1.24	1.57		112	
WENDELSTEIN	24	1503 E	1538		S15	E35	4576	35 D	1				3.00			
ONDREJOV	24	1508 E	1516		S19	E36	4576	8 D	1	3	1512			2.20		

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		START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	McMATH PLAGE REGION				TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH He	MAX. INT. %	
MCMATH	May 1958															
MCMATH	24	1537	1555	1546	N20	W12	4561	18	1	1	1546	2.44	2.68		61	
ONDREJOV	24	1546 E	1552		N18	W15	4561	6 D	1	3	1546			2.50		
AROSA	24	1603	1613		N21	W14	4561	10	1							
MCMATH	24	1607 E	1620		N20	W12	4561	13 D	1	1	1607	2.76	3.04		67	
WENDELSTEIN	24	1608 E	1619		N20	W12	4561	11 D	1				3.00			
AROSA	25	0530 E	0535		S11	E61	4579	5 D	1							
ONDREJOV	25	0530 E	0538		S12	E61	4579	8 D	1	3	0531			2.10		
ONDREJOV	25	0636	0645	0639	S15	E61	4579	9	1&	3	0639			4.20		
ONDREJOV	25	0731 E	0739		S25	W68	4565	8 D	1	3	0732			3.50		
ONDREJOV	25	0812 E	0820		S25	W68	4565	8 D	1	3	0813			2.30		
AROSA	25	0827	0832		N24	E16	4568	5	1							
CAPRI S	25	0828 E	0932		S26	W67	4565	64 D	1	2	0835	.70	2.10			
ONDREJOV	25	0833	0842		N06	E01	4575	9	1	3	0833			2.20		
WENDELSTEIN	25	1116	1147 D		N08	E04	4575	31 D	1				3.00			
WENDELSTEIN	25	1117	1148		N10	E08	4575	31	1				4.00			
CAPRI S	25	1120	1148		N13	E07	4575	28	1	2	1123	2.00	2.10			
ONDREJOV	25	1125 E	1140		N06	E23	4574	15 D	1	2	1127			2.30		
CAPRI S	25	1148 E	1216 D		S26	W68	4565	28 D	1&	3	1152	1.50	4.20			
ZURICH	25	1220 E	1234		S26	W69	4565	14 D	1	3	1220		5.00			
SAC PEAK	25	1622	1645	1635	N43	W61	4557	23	1	2		2.30			13	
ONDREJOV	25	1635	1648	1638	N40	W60	4557	13	1	3	1638			2.40		
SAC PEAK	25	1817	1847	1827	N06	E02	4575	30	1&	2		3.90			20	
HAWAII	25	1824 E	1838 D		N05	E00	4575	14 D	1	1	1824	3.70	3.70			
AROSA	26	0743	0747		S14	E40	4579	4	1							
AROSA	26	0916	0920		N09	W53	4563	4	1							
ONDREJOV	26	0917 E	0919 D		N24	W40	4560	2 D	1	3	0917			2.50		
ONDREJOV	26	1046 E	1101		N14	W58	4563	15 D	1	3	1047			2.10		
WENDELSTEIN	26	1355 F	1441 D		N10	W57	4563	46 D	1				4.00			
ONDREJOV	26	1502	1510	1505	N13	W58	4563	8	1	3	1505			2.20		
MCMATH	26	1730	1815	1742	N43	W80	4557	45	1	1	1742					
USNRL	26	1735	1756	1736	N41	W75	4557	21	1	1	1736	1.13	5.10		51	G-SWF
MT WILSON	26	1739	1833		N08	W16	4575	54	1							
MCMATH	26	1740	1805	1744	N06	W10	4575	25	1&	1	1744	4.46	4.64		64	
SAC PEAK	26	1740	1810	1745	N08	W11	4575	30	2	3		5.70			24	
USNRL	26	1741	1811	1745	N07	W10	4575	30	1	1	1745	3.03	3.26		85	
MITAKA	27	0405	0415	0408	S12	W50	4559	10	1	1	0405	.89	.95	2.27	110	
ONDREJOV	27	0735 E	0743		N30	E80	4587	8 D	1	3	0736					
OTTAWA	27	1410			N19	E15	4578		1	2	1418	1.91	2.13			
SAC PEAK	27	2042	2057 U	2047	N03	E70	4582	15	1	2		3.10			17	
MCMATH	28	1510 E			S18	E15	4579		1							
CAPRI S	28	1511 E	1522		S17	E18	4579	11 D	1	3	1513	2.20	2.40			
MT WILSON	28	2150	2316		S27	W07		86	1							
SYDNEY	29	0345	0530	0420	N15	W20	4574	105	2							
MITAKA	29	0353	0400		S15	E43	4581	7	1	1	0353	3.80	4.07	1.31	134	
MITAKA	29	0356	0412		N08	W26	4574	16	1	1	0356	3.80	3.88	1.30	113	
MITAKA	29	0358	0417	0405	N12	W27	4574	19	1&	1	0415	7.57	7.72	1.80	105	
MITAKA	29	0400	0406		N15	W27	4574	6	1	1	0400	1.86	1.92	1.25	100	
MITAKA	29	0452	0530	0506	N12	W28	4574	38	1	1	0505	1.84	1.90	1.64	115	
UCCLE	29	1045 F			S15	E05	4579		1	4				PAGE	8	

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WENDELSTEIN	29	1451 E	1533 D		N22	E31	4583	42 D	1				3.00			
WENDELSTEIN	29	1453 E	1505		S15	E38	4581	12 D	1				3.00			
UCCLE	29	1524	1528	1524	S16	E39	4581	4	1	2	1524	2.00				
SAC PEAK	29	1525	1610	1535	N23	W00	4578	45	1	3		2.90			20	
USNRL	29	1527	1701	1533	N24	E03	4578	94	1	2	1533	1.58	1.75	1.00	101	
STOCKHOLM	29	1528 E	1550		N22	E03	4578	22 D	1		1540	2.70	3.00			
UCCLE	29	1529	1534 D	1534	N24	E01	4578	5 D	1	2	1534	3.00				
ONDREJOV	29	1530 E	1559 D		N22	E02	4578	29 D	1&	1	1546	.50		2.10		
WENDELSTEIN	29	1533 E	1602		N24	E02	4578	29 D	1&				6.00			
WENDELSTEIN	29	1533 E	1605 D		N27	E08	4578	32 D	1				3.00			
MITAKA	30	0016 E	0026		N16	W12	4577	10 D	1	1	0016	2.78	2.97	1.63	107	
MITAKA	30	0101	0116	0106	S16	W01	4579	15	1	1	0101	1.84	1.90	1.89	134	
NIZAMIAH	30	0326 E	0332 D		N22	W46	4568	6 D	1&	1	0326	2.43	3.80	2.00		
MITAKA	30	0334	0408	0351	N22	W49	4568	34	1&	1	0340	5.96	9.12	1.86	120	
WENDELSTEIN	30	0718 E	0729 D		N28	E44	4583	11 D	1				3.00			
STOCKHOLM	30	0850	0902		N16	E90	4591	12	1		0856	1.00	1.00			
STOCKHOLM	30	0920 E	0959		N16	E90	4591	39 D	1		0933	1.80	1.80			
MEUDON	30	1158	1213		S14	E28	4581	15	1							
UCCLE	30	1502	1525 D	1518	S16	W12	4579	23 D	1	3	1518	2.20				
MT WILSON	30	2120	2151		N19	E40	4583	31	1							
MT WILSON	30	2215	2224		N05	E15		9	1							
MT WILSON	30	2225	2243		S25	W22	4580	18	1							
MITAKA	31	0010 E	0017		N16	W25	4577	7 D	1&	1	0010	4.70	5.36	1.19	100	
MITAKA	31	0225 E	0239		N23	W17	4578	14 D	1&	1	0234	5.67	6.24	1.81	149	
MITAKA	31	0414	0451		N16	W27	4577	37	1&	1	0414	9.43	10.80	2.72	134	
MITAKA	31	0557 E	0611	0602	N16	W29	4577	14 D	2	1	0557	7.60	8.66	3.25	165	S-SWF
SCHAUINS	31	0702 E	0742 D		N16	W28	4577	40 D	1	3			3.00	1.40		
SCHAUINS	31	0727 E	0737		N27	W07	4578	10 D	1	3			4.00	1.50		
UCCLE	31	0857 E	0904		N29	W08	4578	7 D	1	3						
UCCLE	31	0953 E	1020 D		N15	W34	4577	27 D	1	2						
WENDELSTEIN	31	0957 E	1011 D		N13	W34	4577	14 D	1&				5.00			
ZURICH	31	1000 E	1013		N16	W33	4577	13 D	1	3	1000		2.00			
SCHAUINS	31	1000 E	1017 D		N12	W32	4577	17 D	1	2			4.00	1.50		
ZURICH	31	1041 E	1100		N18	W31	4577	19 D	1	3	1041		2.00			
UCCLE	31	1045	1052 D	1047	N20	W35	4577	7 D	1	2	1047	3.20				
UCCLE	31	1128	1135 D		N28	E80	4596	7 D	1	2						
SAC PEAK	31	1347	1427	1400	N23	W30	4577	40	1	2		3.10			17	
WENDELSTEIN	31	1355	1434 D		N23	W29	4577	39 D	1&				6.00			
SAC PEAK	31	2255	2332	2317	N22	E30	4583	37	1	2		3.90			16	S-SWF
MT WILSON	31	2359	0012		N23	W29	4578	13	1							
														PAGE	9	

CAPRI S — ANACAPRI SWEDISH
KODAIKNL — KODAIKANAL
KRASNYA — KRASNAYA PAKHRA
R O EDIN — ROYAL OBSERVATORY, EDINBURGH
R O HERST — GREENWICH ROYAL OBSERVATORY, HERSTMONCEUX
SAC PEAK — SACRAMENTO PEAK
SCHAUINS — SCHAUINSLAND
USNRL — UNITED STATES NAVAL RESEARCH LABORATORY

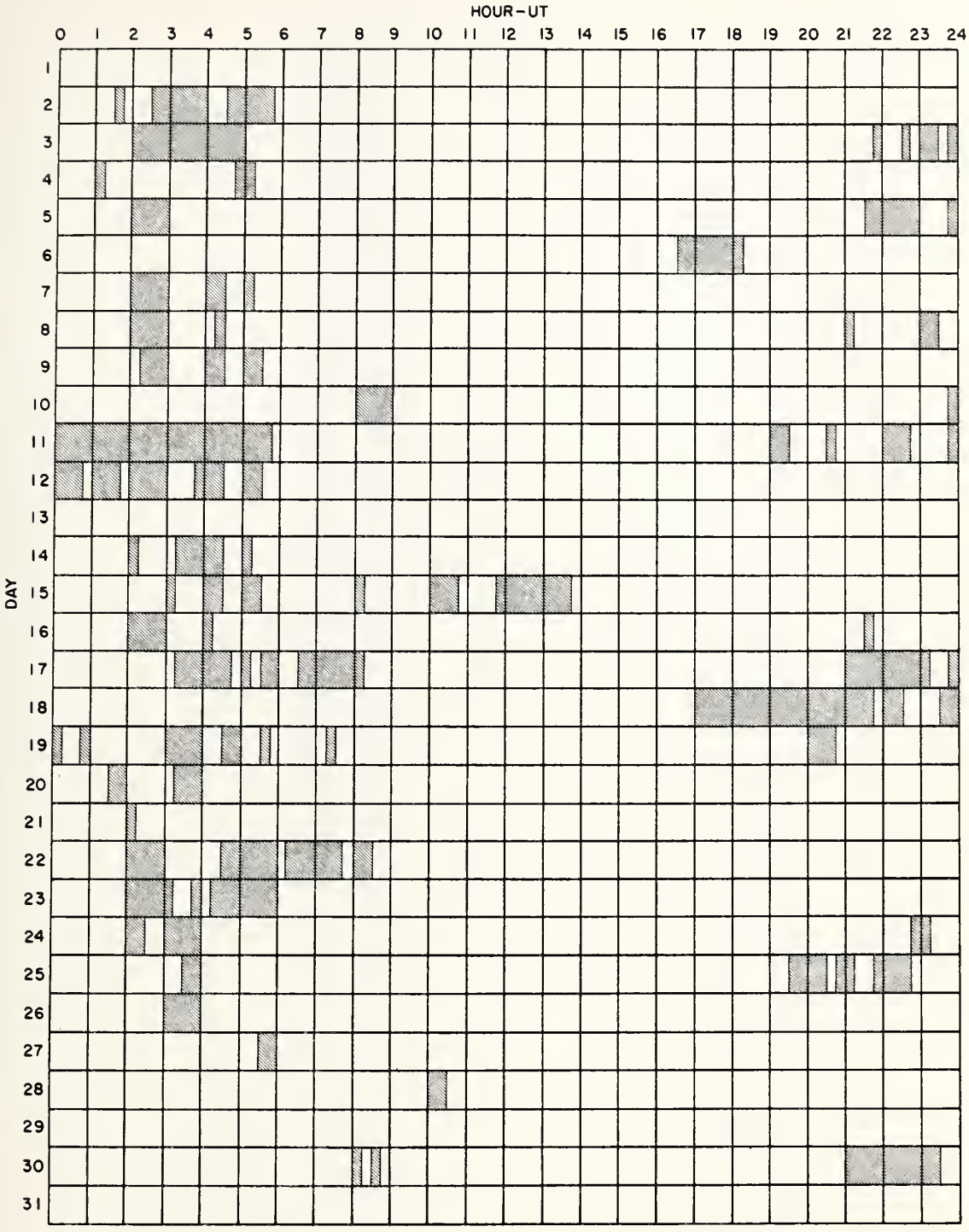
SAC PEAK: ALL VALUES IN MAX. INT. COLUMN ARE ARBITRARY UNITS (0-40), NOT PERCENT OF CONTINUOUS SPECTRUM.

E - LESS THAN
D - GREATER THAN
U - APPROXIMATE
& - PLUS
\- - MINUS

COMMERCE - STANDARDS - BOULDER

INTERVALS OF NO FLARE PATROL OBSERVATIONS

MAY 1958



Times indicated are accurate to the nearest 15 minutes.

Stations included:

Anacapri (Swedish)
Arcetri
Arosa
Athens
Climax
Dunsink
Greenwich Royal Observatory, Herstmonceux
Hawaii
Kodaikanal
McMath-Hulbert
Meudon
Mitaka
Nizamiah
Ondrejov
Ottawa
Royal Observatory, Edinburgh
Sacramento Peak
Uccle
U. S. Naval Research Laboratory
Zürich

COMMERCE - STANDARDS - BOULDER

SUBFLARES NOTED AS FOLLOWS, DATE - UNIVERSAL TIME - COORDINATES

APRIL 1958

	NIZAMIAH	01	0502 E	N35 E39
	ATHENS	01	0655 E	S03 W63
*	ATHENS	01	0736 E	S12 W45
*	ATHENS	01	0738 E	S11 W39
*	ATHENS	01	0756 E	N26 E60
	UCCLE	01	0928	S13 W53
*	AROSA	01	0936	S19 E39
*	UCCLE	01	0938	S11 W83
*	CAPRI S	01	0958 E	S12 W50
*	UCCLE	01	1031	N41 E44
	UCCLE	01	1105	S18 W28
	UCCLE	01	1105	S22 W29
	UCCLE	01	1132	S14 E11
	MCMATH	01	1249	N33 E33
	MCMATH	01	1310	S10 W52
*	MCMATH	01	1325	N08 E90
*	MCMATH	01	1328	S18 E49
*	OTTAWA	01	1328	S16 E48
*	OTTAWA	01	1412	N30 E40
*	OTTAWA	01	1413	N37 E35
*	SAC PEAK	01	1413	N33 E38
	SAC PEAK	01	1455	S12 W56
	MCMATH	01	1455	S12 W53
	SAC PEAK	01	1535	S14 W54
*	OTTAWA	01	1537	N36 E38
*	SAC PEAK	01	1537	N20 E42
*	SAC PEAK	01	1537	N37 E38
*	SAC PEAK	01	1600	S06 W42
*	USNRL	01	1605 E	S08 W47
*	CLIMAX	01	1646	S21 W40
*	MCMATH	01	1646	S24 W38
*	SAC PEAK	01	1647	S22 W38
*	OTTAWA	01	1650 E	S23 W37
*	HUANCAYO	01	1650	S22 W34
	SAC PEAK	01	1652	S11 W57
	MCMATH	01	1740	S16 E36
*	MCMATH	01	1800	S24 W38
*	CLIMAX	01	1802	S21 W40
*	OTTAWA	01	1804 E	S24 W38
*	SAC PEAK	01	1805	S24 W40
	MCMATH	01	1822	N34 E30
*	SAC PEAK	01	1845	N25 E45
*	USNRL	01	1846	N25 E44
	MCMATH	01	1905	S16 E35
	SAC PEAK	01	1910	S15 E35
*	SAC PEAK	01	2002	S14 W57
*	HAWAII	01	2004	S12 W59
	CLIMAX	01	2034	S14 E33
	SAC PEAK	01	2035	S16 E35
	USNRL	01	2036	S15 E35
	SAC PEAK	01	2037	S22 W24
	SAC PEAK	01	2152	S16 E34
	SAC PEAK	01	2217	S11 W60
	SAC PEAK	01	2240	S25 W42
	SAC PEAK	01	2307	S13 W50
	HAWAII	01	2312	S15 W52
	ATHENS	02	0716 E	N24 E38
	ATHENS	02	0740 E	N33 E21
	UCCLE	02	0916 E	S26 E82
	USNRL	02	1240	N33 E20
	OTTAWA	02	1241	N33 E19
*	OTTAWA	02	1252	S21 W39
*	ZURICH	02	1340 E	S18 E23
*	OTTAWA	02	1352	S17 E31
*	USNRL	02	1352	S18 E31
*	MCMATH	02	1356	N20 E36
*	CAPRI S	02	1356 E	N22 E35
	USNRL	02	1423	S22 W50
*	USNRL	02	1425	S23 W40
*	USNRL	02	1506	N36 E26
	USNRL	02	1517	N32 E18
	OTTAWA	02	1518	N31 E16
*	CAPRI S	02	1545 E	S17 E27
*	MCMATH	02	1609 E	N30 E20
*	USNRL	02	1609	N31 E19
*	MCMATH	02	1650 E	N20 E30
	USNRL	02	1705	S18 E23
	MCMATH	02	1722	N32 E17
*	MCMATH	02	1725	S14 W66
	MCMATH	02	1730	S16 E22
	MCMATH	02	1735	S22 W40
	MCMATH	02	1741	N32 E18
	OTTAWA	02	1741	N32 E17
	MCMATH	02	1803	N32 E18
*	OTTAWA	02	1809	S24 E72
	MCMATH	02	1840	S16 E23
	USNRL	02	1841	S15 E22
	MCMATH	02	1921	N20 E25
*	MCMATH	02	1922	S16 E23
	HAWAII	02	1936	N33 E18
	MCMATH	02	1945	N32 E17
	MCMATH	02	1948	S23 W42
	MCMATH	02	2043	S16 E23
	ATHENS	03	0628 E	N32 E10
	ATHENS	03	0752 E	S15 W17
*	CAPRI S	03	0826 E	N34 E18
	UCCLE	03	0858	N36 E19
*	UCCLE	03	0924	N32 E10
	UCCLE	03	0928	S11 W90
	UCCLE	03	0930	S22 W64
	UCCLE	03	1003	S15 W20
	UCCLE	03	1006	S20 E15
	WENOEL	03	1102 E	N33 E20
	MCMATH	03	1150	N33 E15
	USNRL	03	1240	N49 E15
	WENOEL	03	1253 E	N11 E72
	USNRL	03	1254	N14 E71
	ZURICH	03	1320 E	S15 E11
*	OTTAWA	03	1323	S25 E66
*	USNRL	03	1329 E	S27 E70
	ZURICH	03	1350	N13 E71
*	USNRL	03	1405	S15 E14
	SAC PEAK	03	1410	N31 E14
	MCMATH	03	1411	N32 E14
	USNRL	03	1412	N32 E14
	OTTAWA	03	1415	S19 E13
	MCMATH	03	1511	N13 E70
*	SAC PEAK	03	1530	S17 E11
*	MCMATH	03	1540	S16 E12
	SAC PEAK	03	1555	S17 E11
	MCMATH	03	1556	S16 E12
	WENOEL	03	1603 E	N23 E18
	SAC PEAK	03	1647	N31 E08
	CLIMAX	03	1651	N31 E06
	MCMATH	03	1651	N32 E07
	USNRL	03	1651	N32 E08
	SAC PEAK	03	1725	N35 E15
*	MCMATH	03	1725	S15 E10
*	SAC PEAK	03	1725	S17 E09
	USNRL	03	1727	N29 E13
	MCMATH	03	1727	N28 E12
*	USNRL	03	1727	S14 E10
	MCMATH	03	1745	N30 E13
	SAC PEAK	03	1745	N28 E11
	USNRL	03	1746	N30 E12
	USNRL	03	1803	N32 E10
	SAC PEAK	03	1805	N28 E11
	MCMATH	03	1807	N13 E75
*	USNRL	03	1820	S25 E66
	USNRL	03	1821	N34 E12
	USNRL	03	1848	S09 E11
	USNRL	03	1855	N24 W13
*	MCMATH	03	1909	S15 E10
*	SAC PEAK	03	1915	S16 E08
	USNRL	03	1919 E	N37 E12
	CLIMAX	03	2001	S26 E67
	USNRL	03	2010	N09 W26
	USNRL	03	2040	S15 E09
	SAC PEAK	03	2122	S17 E09
	CLIMAX	03	2123	S13 E09
	SAC PEAK	03	2357	N29 W01
	SAC PEAK	03	2402	S19 E07
	ATHENS	04	0628 E	N13 E59
	ATHENS	04	0658 E	N16 E37
	ATHENS	04	0701 E	N11 E61
	ATHENS	04	0704 E	N21 E06
	ATHENS	04	0706 E	N13 E62
	USNRL	04	1217 E	N08 W35
	USNRL	04	1247	N32 W02
	MCMATH	04	1247	N32 W04
	MCMATH	04	1305	N36 W06
	OTTAWA	04	1305	N36 W08
	USNRL	04	1306	S20 W65
	OTTAWA	04	1313	N20 E05
	USNRL	04	1314	N21 W06
	USNRL	04	1324	S13 W90
	OTTAWA	04	1334	N20 E08
	CLIMAX	04	1427	N09 E65
	USNRL	04	1507	S18 E01
	USNRL	04	1527	N10 E24
	USNRL	04	1559	S18 W73
	USNRL	04	1626	N22 E06
	USNRL	04	1833	N30 W03
	MCMATH	04	1939	S07 W33
*	USNRL	04	1953 E	S15 W05
	MCMATH	04	2010	N34 E07
	USNRL	04	2013	N35 W08
	MCMATH	04	2052	N13 E53
	ATHENS	05	0613 E	S15 W03
	ATHENS	05	0630 E	S15 W04
*	ATHENS	05	0728	N21 W00
*	ATHENS	05	0728	S18 W08
	WENOEL	05	0835 E	N12 E47
	AROSA	05	1035	N05 E58
	OTTAWA	05	1327	N12 E43
	OTTAWA	05	1409	S20 W09
	OTTAWA	05	1422	N12 E34
	SAC PEAK	05	1730	S21 W12
	SAC PEAK	05	1805	N30 W16
	SAC PEAK	05	2002	N26 W37
	SAC PEAK	05	2110	N11 E52
	HAWAII	05	2114	N11 E53
	SAC PEAK	05	2142	N28 W39
	SAC PEAK	05	2250	N07 W56
	SAC PEAK	05	2250	N05 E55
	SAC PEAK	06	1435	S24 E18
*	MCMATH	06	1652	N30 W50
*	SAC PEAK	06	1655	N29 W49
	SAC PEAK	06	1905	N25 W38
	SAC PEAK	06	2002	N31 W32
	CLIMAX	06	2020	N11 E01
	SAC PEAK	06	2020	N13 E01
	HAWAII	06	2022	N12 E01
	SAC PEAK	06	2025	N16 E42
	SAC PEAK	06	2305	N17 E43
	CLIMAX	06	2310 E	N16 E41
	ATHENS	07	0727	N18 E29
	ATHENS	07	0727	N16 E33
	SAC PEAK	07	1417	N17 E02
	SAC PEAK	07	1505	N29 W65

COMMERCE - STANDARDS - BOULDER

*Rated as flare of importance $\geq$ 1 by other observatories (see CRPL-F 165 Part B).

SUBFLARES NOTED AS FOLLOWS. DATE - UNIVERSAL TIME - COORDINATES

APRIL 1958

	SAC PEAK	07	1525	N17 E29
	SAC PEAK	07	1552	N16 E01
	MCMATH	07	1613	N10 E26
	SAC PEAK	07	1617	N09 E24
	USNRL	07	1656 E	N48 E65
	SAC PEAK	07	1845	N16 W01
	MCMATH	07	1846	N16 E00
*	SAC PEAK	07	2025	N15 E02
*	USNRL	07	2027 E	N17 W03
*	USNRL	07	2034	N15 E02
	MCMATH	07	2034	S14 W44
	SAC PEAK	07	2045	S14 W44
	SAC PEAK	07	2050	N15 E05
	MCMATH	07	2117	S14 E18
	SAC PEAK	07	2117	S14 E18
	SAC PEAK	07	2302	N17 W04
	SAC PEAK	07	2322	N15 W04
*	SAC PEAK	07	2332	N07 E18
	ATHENS	08	0753	N16 W01
*	CAPRI S	08	0852	N33 W48
	MCMATH	08	1126	S13 E56
	MCMATH	08	1138	N15 E16
	MCMATH	08	1150	N16 W20
	USNRL	08	1205 E	S06 E85
	MCMATH	08	1207	S14 E56
	USNRL	08	1211	S14 E59
	MCMATH	08	1258	S15 W80
	MCMATH	08	1315	S13 E56
	MCMATH	08	1333	S20 W90
*	MCMATH	08	1419	N16 E16
	OTTAWA	08	1443	N14 W06
	MCMATH	08	1445	N14 W06
	MCMATH	08	1612	N15 E22
	MCMATH	08	1633	N13 E05
	USNRL	08	1801	N14 W11
	USNRL	08	1913	N12 W31
	USNRL	08	1926	N13 E03
	UCCLE	09	0957	N21 W60
*	MCMATH	09	1154	S19 W90
	MCMATH	09	1247	N42 E09
	MCMATH	09	1405	N42 E09
*	USNRL	09	1446	N26 W57
	MCMATH	09	1733	S29 W90
	MCMATH	09	2020	N20 W02
	MCMATH	09	2135	N18 W65
	MCMATH	09	2158	S15 W70
	ATHENS	10	0622	N15 W07
	ATHENS	10	0651	N24 W72
	CAPRI G	10	1314 E	N15 W38
	SAC PEAK	10	1430	N16 W41
	SAC PEAK	10	1447	N08 W16
	SAC PEAK	10	1510	N17 W41
*	SAC PEAK	10	1545	N07 W11
	SAC PEAK	10	1557	N33 W90
	SAC PEAK	10	1650	N12 W58
	OTTAWA	10	1745	N05 W12
	SAC PEAK	10	1820	N15 W15
	SAC PEAK	10	1925	N20 W80
	SAC PEAK	10	1940	S14 E28
*	SAC PEAK	10	2030	N25 W85
	SAC PEAK	10	2035	N16 W90
	SAC PEAK	10	2100	N06 W03
*	CLIMAX	10	2101	N07 W12
	SAC PEAK	11	1510	N16 W90
	SAC PEAK	11	1555	N15 W90
	SAC PEAK	11	1637	N28 W87
*	SAC PEAK	11	1947	N07 W26
	SAC PEAK	11	2125 U	S15 E13
	UCCLE	12	0836	N30 W70
	SAC PEAK	12	1700	N13 E18
	CLIMAX	12	1940	N19 E19
	MCMATH	12	1940 E	N20 E18
	SAC PEAK	12	1942 E	N19 E19
	MCMATH	12	1945	S12 W52
	SAC PEAK	12	2222	N19 E18
	UCCLE	13	0952	S16 E35
	USNRL	13	1403	N16 W44
	MCMATH	13	1404	N15 W43
	MCMATH	13	1453	N10 E10
	MCMATH	13	1726	N25 W80
	USNRL	14	1202	N27 W58
*	MCMATH	14	1300	N26 W60
	USNRL	14	1418	S11 W70
	SAC PEAK	14	1422	N10 W71
	USNRL	14	1450	N27 W60
	MCMATH	14	1451	N20 W60
	USNRL	14	1457	S21 E90
	USNRL	14	1507	N22 W67
*	USNRL	14	1531 E	N26 W60
	MCMATH	14	1602	N08 W12
	WENDEL	14	1602 E	N17 W04
	USNRL	14	1641	S20 E87
*	USNRL	14	1650	N26 W60
	SAC PEAK	14	1650	N12 W09
	MCMATH	14	1705	S21 E90
	SAC PEAK	14	1712	S21 E87
	USNRL	14	1713	S21 E89
	MCMATH	14	2134	N22 W70
	USNRL	14	2138	N23 E90
	SAC PEAK	14	2250	N15 W62
	UCCLE	15	1049	S19 W80
*	OTTAWA	15	1148	N12 W11
	UCCLE	15	1154 E	N27 W80
*	MCMATH	15	1227	S20 E75
	MCMATH	15	1228	N15 W70
	MCMATH	15	1318	S20 E70
	USNRL	15	1318	S21 E72
	USNRL	15	1326	S11 W38
	SAC PEAK	15	1437	N28 W80
	MCMATH	15	1438	N28 W85
	OTTAWA	15	1438	N26 W74
	USNRL	15	1439	N27 W78
	MCMATH	15	1500	N12 W22
*	SAC PEAK	15	1535	N16 E47
*	USNRL	15	1536	N17 E47
	MCMATH	15	1615	N16 E46
	SAC PEAK	15	1625	S21 E75
*	SAC PEAK	15	1735	S20 E70
*	SAC PEAK	15	1735	N16 E46
*	USNRL	15	1738	N17 E46
*	USNRL	15	1808 E	S20 E70
*	SAC PEAK	15	1810	S21 E70
	MCMATH	15	2008	N16 E45
	SAC PEAK	15	2010	N16 E45
	USNRL	15	2011	N16 E45
	MCMATH	15	2020	N26 W90
*	USNRL	15	2026	S10 W41
*	SAC PEAK	15	2027	S10 W42
	SAC PEAK	15	2035	N16 E44
	MCMATH	15	2035	N16 E45
	USNRL	15	2037	S10 W41
	SAC PEAK	15	2205	N17 E45
	SAC PEAK	15	2310	N16 E43
	NIZAMIAH	16	0535	S20 E64
*	CAPRI S	16	1017 E	S23 E62
	OTTAWA	16	1311	S19 E54
	MCMATH	16	1311	S20 E60
*	MCMATH	16	1322	S20 E60
	MCMATH	16	1400	N07 W18
	MCMATH	16	1408	N23 E60
*	OTTAWA	16	1514	N12 W35
*	SAC PEAK	16	1543 E	S18 E59
	SAC PEAK	16	1550	N17 E29
	HUANCAYO	16	1553 E	N16 E31
	MCMATH	16	1553	N17 E28
*	USNRL	16	1649	S20 E60
	MCMATH	16	1844	S20 E50
	MCMATH	16	1903	N16 E27
	MCMATH	16	1931	N16 E27
	MCMATH	16	1957	N23 E56
*	CLIMAX	16	2116	N18 E28
*	MCMATH	16	2116	N16 E26
	CLIMAX	17	0032	N18 E24
	UCCLE	17	1024	S19 E53
	USNRL	17	1158	N19 E17
	USNRL	17	1158 E	N12 E80
	USNRL	17	1158 E	N12 W44
	USNRL	17	1158 E	N25 E50
	MCMATH	17	1200	N17 E17
	USNRL	17	1228	S17 E42
*	MCMATH	17	1522	S20 E45
	USNRL	17	1545	S08 E67
*	CLIMAX	17	1615	S21 E38
*	CLIMAX	17	1627	S09 E68
*	USNRL	17	1627	S08 E67
	USNRL	17	1901	S18 E45
	MCMATH	17	1940	S21 E44
	MCMATH	17	2118	S21 E44
*	USNRL	18	1212 E	S20 E35
	MCMATH	18	1229	S15 E90
	USNRL	18	1230	S15 E90
	USNRL	18	1404	S20 E33
*	SAC PEAK	18	1442	N21 E36
*	USNRL	18	1443	N25 E36
	MCMATH	18	1525	S06 W70
	MCMATH	18	1611	S07 W75
	MCMATH	18	1624	N14 W65
	USNRL	18	1625	N11 W64
	USNRL	18	1818	S09 E90
	SAC PEAK	18	1820 E	S09 E90
	MCMATH	18	1835	N20 W50
	USNRL	18	1836	S09 E85
*	SAC PEAK	18	2110	N22 E32
	MCMATH	18	2120	S20 E30
*	UCCLE	19	1020	N26 E26
	UCCLE	19	1053	N18 W05
	MCMATH	19	1218	N24 E24
	OTTAWA	19	1218	N24 E22
*	USNRL	19	1251	N17 W06
	CAPRI G	19	1300 E	N22 E18
	MCMATH	19	1348	N25 E23
	USNRL	19	1350	N25 E22
	CAPRI G	19	1401 E	N22 E18
	UCCLE	19	1426	N26 E24
	UCCLE	19	1511	N18 W05
	USNRL	19	1525	S10 W90
	UCCLE	19	1528	N21 W03
	SAC PEAK	19	1547	N25 E21
	USNRL	19	1551	N26 E20
	UCCLE	19	1553	N21 E21
	UCCLE	19	1636	N21 W10
	MCMATH	19	1717	N25 E20
*	UCCLE	19	1719	N18 W10
	SAC PEAK	19	1902 E	N24 E21
*	SAC PEAK	19	2107	N24 E17

SUBFLARES NOTED AS FOLLOWS, DATE - UNIVERSAL TIME - COORDINATES

APRIL 1958

	SAC PEAK	19	2215	S23 E90
	SAC PEAK	19	2217	S26 E09
	CAPRI G	20	0904	N23 E11
	CAPRI G	20	0925	N23 E13
	UCCLE	20	1031	N23 E10
	USNRL	20	1207 E	N19 W70
	CAPRI G	20	1249	N22 W70
*	SAC PEAK	20	1350	S26 E01
*	USNRL	20	1351	S26 E02
	USNRL	20	1450	S25 E01
*	USNRL	20	1506	S25 E01
*	UCCLE	20	1506	S24 E03
*	SAC PEAK	20	1512	S25 W00
	USNRL	20	1514	S25 E01
	WENOEL	20	1617 E	N12 E38
	WENOEL	20	1628 E	S25 W53
	WENOEL	20	1649 E	N21 W78
	SAC PEAK	20	1650	N14 E39
	SAC PEAK	20	1720	N20 W80
	SAC PEAK	20	1807	S20 W04
	SAC PEAK	20	1840	S07 E35
	SAC PEAK	20	2227	S23 E78
*	SAC PEAK	20	2255	N25 E06
	SAC PEAK	20	2315	N27 E11
	ARCETRI	21	0847	N23 W26
	WENOEL	21	1122 E	S22 W04
	UCCLE	21	1154	S13 E59
	UCCLE	21	1208	S13 E59
	USNRL	21	1215	S13 E56
	USNRL	21	1219	N18 W35
*	USNRL	21	1307	S12 E57
	SAC PEAK	21	1712	S22 E70
	USNRL	21	1731 E	S19 E66
*	SAC PEAK	21	1752	N20 W39
*	USNRL	21	1753 E	N19 W38
*	MCMATH	21	1755	N20 W38
	USNRL	21	1755	N08 E65
	USNRL	21	1807	S11 E61
	SAC PEAK	21	1810	S26 W15
	USNRL	21	1812	S25 W14
	USNRL	21	1848	S26 W67
	USNRL	21	1927	N07 E59
*	SAC PEAK	21	2047	N20 W40
	SAC PEAK	21	2137	N08 E61
	SAC PEAK	21	2335	N10 E22
	ZURICH	22	0808	S06 E34
*	CAPRI S	22	0828 E	S23 W12
	CAPRI G	22	1040	N16 E09
*	MCMATH	22	1220	N12 W19
	ZURICH	22	1233	N25 W16
	MCMATH	22	1256	S18 W22
*	MCMATH	22	1314	N12 W19
	MCMATH	22	1424	N29 W08
	SAC PEAK	22	1425	N30 W10
	MCMATH	22	1440	N27 W13
	SAC PEAK	22	1445	N07 E43
	SAC PEAK	22	1457	S23 W15
	MCMATH	22	1458	S23 W14
*	SAC PEAK	22	1527	N15 E12
	USNRL	22	1750	N15 E09
*	USNRL	22	1916 E	N11 E11
*	USNRL	22	1917	N09 E41
	USNRL	22	1934 E	N24 W21
	USNRL	22	2023 E	S23 W21
	USNRL	22	2025	S32 E37
	UCCLE	23	0826	N15 E02
	UCCLE	23	0911	N11 E02
	CAPRI G	23	0930	S27 W70
	UCCLE	23	1119	N18 W60
	USNRL	23	1243 E	N15 E00
	USNRL	23	1243 E	N07 E38
	USNRL	23	1243 E	S21 W34
	USNRL	23	1345	N26 W34
*	USNRL	23	1457	N16 W05
	USNRL	23	1503	N19 W06
	SAC PEAK	23	1512	N26 W36
	MCMATH	23	1512	N26 W33
	USNRL	23	1527	S23 W32
	SAC PEAK	23	1702	N24 W34
	USNRL	23	1704	N25 W35
	SAC PEAK	23	1815	N07 E25
	USNRL	23	1822 E	S11 E38
	USNRL	23	1823	N04 E52
	SAC PEAK	23	1840	N13 W35
	USNRL	23	1842	N03 W35
*	SAC PEAK	23	1850	N15 W07
	USNRL	23	1854	N06 E52
	USNRL	23	2034	S20 W39
*	SAC PEAK	23	2042	N15 W02
	USNRL	23	2049	N13 W12
	SAC PEAK	23	2050	N14 W13
	WENOEL	24	0812 E	N23 W40
	ZURICH	24	0813	N23 W41
	UCCLE	24	0816	N11 E29
*	SAC PEAK	24	1255	N10 E24
	SAC PEAK	24	1312	N11 E23
	SAC PEAK	24	1322	S16 W87
	SAC PEAK	24	1345	S17 W90
	MCMATH	24	1346	S18 W90
	SAC PEAK	24	1622	N10 E22
*	USNRL	24	1835	N07 E18
	USNRL	24	1930	S25 W47
*	WENOEL	25	1414 E	N09 E25
	USNRL	25	1436	N14 W36
	USNRL	25	1555	S17 E55
	MCMATH	25	1555	S17 E53
*	SAC PEAK	25	1602	N12 E80
*	USNRL	25	1603	N14 E78
	SAC PEAK	25	1830	S17 E55
	USNRL	25	1839	S16 E54
*	SAC PEAK	25	1945	N24 E90
	USNRL	25	1947	N24 E90
	SAC PEAK	25	2120	S18 E90
	WENOEL	26	0800 E	N13 E73
*	OTTAWA	26	1225 E	N24 E75
*	WENOEL	26	1225 E	N20 E82
	USNRL	26	1303	N15 E72
	MCMATH	26	1355 E	S20 W70
	CAPRI G	26	1400	N12 W78
	SAC PEAK	26	1410	N29 E90
	USNRL	26	1415	N30 E 9
	MCMATH	26	1416	N30 E90
	CAPRI G	26	1438	N17 E69
	WENOEL	26	1442 E	N16 E71
	USNRL	26	1501	N25 E77
*	SAC PEAK	26	1552	S10 W19
	MCMATH	26	1553	S10 E20
	SAC PEAK	26	1605	N23 E80
	USNRL	26	1607	N25 E77
	WENOEL	26	1611 E	N18 E75
*	USNRL	26	1621	S22 E60
	MCMATH	26	1624	N11 E03
	MCMATH	26	1955	N13 E24
	CLIMAX	26	2259	N26 E79
	SAC PEAK	26	2300	N23 E80
*	CAPRI S	27	0750 E	N09 W13
	UCCLE	27	0918	N15 W60
	CAPRI G	27	0919 E	N14 W54
	OTTAWA	27	1103 E	N16 E57
	CAPRI G	27	1113 E	N15 E62
	OTTAWA	27	1117	N16 E57
	OTTAWA	27	1206	N21 E53
	CAPRI G	27	1210	N14 W66
	CAPRI G	27	1213	N21 E67
	SAC PEAK	27	1350	N20 E69
	OTTAWA	27	1350	N20 E66
*	SAC PEAK	27	1455	S16 E77
	SAC PEAK	27	1647	N16 E55
	SAC PEAK	27	1802	N30 E75
	SAC PEAK	27	1850	N31 E75
	SAC PEAK	27	1855	N08 E52
	SAC PEAK	27	1902	N12 W21
	SAC PEAK	27	1910	N18 E60
	HAWAII	27	1924	S12 E80
	SAC PEAK	27	1925 E	S15 E77
	SAC PEAK	27	2127	N17 E54
	HAWAII	27	2228	N15 E56
*	SAC PEAK	27	2322	N08 W08
	SAC PEAK	27	2325	S20 E53
	NIZAMIAH	28	1032	N21 E49
	SAC PEAK	28	1255 E	N21 E46
	SAC PEAK	28	1420	N26 E11
*	SAC PEAK	28	1450	N20 E44
	CAPRI G	28	1548 E	S16 E58
	CAPRI G	28	1551	N16 E42
	SAC PEAK	28	1552	N15 E44
	SAC PEAK	28	1622	N34 E35
	SAC PEAK	28	2032	S16 E62
	SAC PEAK	28	2032	N08 W23
	SAC PEAK	28	2107	S17 E50
	SAC PEAK	28	2140	N20 E46
	SAC PEAK	28	2210	N20 E32
	SAC PEAK	28	2235	N12 E35
	SAC PEAK	28	2235	S27 E19
*	SAC PEAK	28	2332	S16 E61
	CAPRI G	29	0850 E	N15 W38
*	SAC PEAK	29	1236 E	S14 E51
	CAPRI G	29	1315 E	S19 W02
	SAC PEAK	29	1344	S15 E53
	USNRL	29	1344 E	S15 E50
	SAC PEAK	29	1410	S15 E44
*	MCMATH	29	1427 E	N28 E44
*	SAC PEAK	29	1430	S15 E44
	USNRL	29	1435 E	S20 W05
	CAPRI G	29	1444 E	S19 W01
	SAC PEAK	29	1445	S19 W05
	CAPRI G	29	1445	S13 E51
	USNRL	29	1449	S14 E47
	SAC PEAK	29	1450 E	S15 E44
	SAC PEAK	29	1452 E	N19 E25
	CAPRI G	29	1541	S14 E50
	USNRL	29	1550	S15 E48
	CAPRI G	29	1604	N20 E43
	CAPRI G	29	1608	S16 E49
	SAC PEAK	29	1608	N22 E34
	USNRL	29	1609	N19 E35
*	SAC PEAK	29	1650	S14 E39
*	USNRL	29	1652	S15 E40
	USNRL	29	1759	S14 E45
	MCMATH	29	1800 E	S14 E44
*	SAC PEAK	29	2125	S22 E46
	HAWAII	29	2226	S19 E40
	SAC PEAK	29	2230	N20 E33
	SAC PEAK	29	2230	S22 E46
	SAC PEAK	29	2315 E	S19 E36
	SAC PEAK	29	2330	N20 E20
	HAWAII	29	2334	N18 E20
	SAC PEAK	29	2335	S18 W10
	CAPRI G	30	0711 E	N22 E20
	WENOEL	30	0713 E	N20 E18
	UCCLE	30	0851	N14 E14
*	UCCLE	30	0916	S16 E42
	CAPRI G	30	0932	N22 E20
*	UCCLE	30	0945	S15 E45
*	UCCLE	30	0950	S15 E37
*	R O HERST	30	1023 E	N21 E16
	CAPRI G	30	1031	S14 E43
	UCCLE	30	1104 E	N21 E16
*	MCMATH	30	1148 E	N20 E14
*	OTTAWA	30	1243	N30 E35
*	USNRL	30	1243	N29 E35
*	USNRL	30	1249	S18 E33
	SAC PEAK	30	1325	S15 E34
	USNRL	30	1328	S17 E33
	MCMATH	30	1330 E	S16 E30
*	CAPRI G	30	1425	S16 E37
*	SAC PEAK	30	1425	S15 E29
	SAC PEAK	30	1525	N15 E11
*	WENOEL	30	1546 E	S17 E34
*	USNRL	30	1547	S18 E31
*	CAPRI S	30	1551 E	S14 E32
	SAC PEAK	30	1650	N24 E12
*	SAC PEAK	30	1725	S15 E32
*	OTTAWA	30	1729	S15 E31
	MCMATH	30	1800	N14 E08
	SAC PEAK	30	1807	N15 E09
	USNRL	30	1817	N12 E10
	MCMATH	30	1825	S16 E27
	SAC PEAK	30	1847	S13 E37
	MCMATH	30	1847	S16 E35
	SAC PEAK	30	1915	N15 E08
	MCMATH	30	1916	N21 E10
	OTTAWA	30	1918 E	N20 E10
	USNRL	30	1918	N20 E12
	SAC PEAK	30	2030	S16 E27
	MCMATH	30	2032	S16 E25
	SAC PEAK	30	2047	S16 E27
	MCMATH	30	2050	S16 E25
	MCMATH	30	2050	N14 E08
	SAC PEAK	30	2100	N13 E08
	SAC PEAK	30	2110	N15 E08
	MCMATH	30	2110	N14 E08
*	SAC PEAK	30	2122	S16 E28
*	SAC PEAK	30	2155	N17 E15
	SAC PEAK	30	2206	S15 E26
	MCMATH	30	2206	S15 E28
*	SAC PEAK	30	2210	N15 E07
	SAC PEAK	30	2240	N16 E15
	SAC PEAK	30	2320	S15 E28
*	SAC PEAK	30	2335	N15 E05

SOLAR FLARES

July 1957

OBSERVATORY	DATE July 1957	OBSERVED UNIVERSAL TIME			LOCATION			DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT
		START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	McMATH PLAGE REGION				TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	
TASHKENT	01	0311 E	0436	0315 U	N11	E49	4046	85 D	1			4.96		2.70	190	
TASHKENT	01	0332 E	0359		S11	E16	4043	27 D	1			5.31		2.10	210	
TASHKENT	01	0408 E	0452	0415 U	S19	W76	4030	44 D	1			1.42		3.30	290	Slow S-SWF
SIMEIZ	01	0614	0620	0616 U	S30	E55	4044	6	1			1.30			190	
KIEV	01	1101 E			N14	E52	4046		1			1.20			200	
ZURICH	01	1403 E	1407		S18	E27	4045	4 D	1	3	1403		1.00			
ZURICH	01	1410 E	1438	1412	N09	W17	4039	28 D	1	3	1412		6.00			
TASHKENT	02	0514	0606	0521 U	S12	E15	4045	52	1			.71		1.30	300	
TASHKENT	02	0556 E	0612	0558 U	N09	W26	4039	16 D	1			3.89		2.10	200	
SIMEIZ	02	0708	0740	0711	S29	E34	4044	32	1			3.60		2.30	200	S-SWF
NIZMIR	02	0744 E	0805 D	0803 U	S31	E29	4044	21 D	1			2.70			240	
SIMEIZ	02	0750	0800	0751	N10	W34	4039	10	1			1.75		2.00	200	
SIMEIZ	02	0822 E	0826 D	0824 U	N10	W30	4039	4	1&			6.00			220	
SIMEIZ	02	0829 E	0830 D		S25	W90	4030	1 D	1			1.20			200	
SIMEIZ	02	0839 E	0929 D	0918 U	N09	W31	4039	50 D	1&			4.50			300	
KIEV	02	1018 E	1025 D	1019 U	N13	E38	4046	7 D	1			2.00			200	
KIEV	02	1027 E	1032 D		S10	W17	4041	5 D	2			2.55			300	
KIEV	02	1032 E	1034 D	1032 U	S14	W15	4041	2 D	1&			3.10			230	
KIEV	02	1110 E	1120 D	1110 U	N11	E41	4046	10 D	1			1.10			210	S-SWF
KIEV	02	1132 E	1135 D		N12	E39	4046	3 D	1&			2.04		1.70		
KIEV	02	1211 E	1229 D		N07	E42	4046	18 D	1			2.04		1.82	120	
SYDNEY	02	2327	2338	2329	N15	E70		11	1	3	2329	2.00	5.00			
SYDNEY	03	0007	0028	0014	N10	W40	4039	21	1	3	0014	2.00	2.00			
SYDNEY	03	0120	0131	0125	S11	W14	4043	11	1	3	0125	3.00	3.00			
SYDNEY	03	0254	0400	0321	N14	E65	4048	66	2	3	0321	3.00	5.00			
ZURICH	03	0728	0832	0740	N13	W41	4039	64	2	3	0740		25.00	1.90		S-SWF
SIMEIZ	03	0731	0742	0732	S17	E07	4045	11	1			1.75			160	
ZURICH	03	0836 E	1005	0838	N09	W41	4039	89 D	2	3	0838		5.00	6.00		
KHARKOV	03	0842 E	1110	1050 U	N11	W39	4039	148 D	2			7.00				S-SWF
ZURICH	03	1350	1355	1350	S10	W19	4043	5	1	3	1350		1.00			
SYDNEY	04	0031	0042	0032	N14	E26	4046	11	1	2	0032	2.00	2.00			
SYDNEY	04	0427	0444 D	0430	S14	W21	4043	17	1	2	0430	2.00	3.00			
TASHKENT	04	0427	0448	0431 U	S12	W24	4043	21	1			3.19		2.70	230	
SIMEIZ	04	0718	0743	0720	N10	W01	4046	25	1			3.00		2.30	210	S-SWF
ZURICH	04	0732 E	0737		N08	W02	4046	5 D	1	3	0732		5.00	1.50		
MOSCOW	04	1040 E	1134 D	1047 U	S13	W25	4043	54 D	1			2.55		1.45	150	
MOSCOW	04	1134 E	1154 D		N12	E39	4048	20 D	3			22.93		1.70	150	
ABASTUMANI	06	0549	0643	0619	S11	W55	4043	54	1&			3.15			312	
SIMEIZ	06	0617	0638	0624	S08	W56	4043	21	1			1.30		2.40	250	
MOSCOW	06	1031 E	1036 D		S13	W85	4043	5 D	1							
MOSCOW	06	1031 E	1205 D	1036 U	S19	E69	4051	94 D	1&			4.08		1.20	150	
MOSCOW	06	1207 E	1213 D		N05	W32	4046	6 D	1			1.53		1.60	120	
KIEV	06	1240 E	1301 D	1250 U	N12	W33	4046	21 D	1			1.70			240	
TASHKENT	07	0458 E	0512		N11	W41	4046	14 D	1			5.31		1.60	230	
MOSCOW	07	0952 E	1315 D	1203 U	N13	W42	4046	203 D	2&			15.00		2.20		
MOSCOW	07	0957 E	1248 D	1203 U	N26	W40	4046	171 D	2			7.64		1.37		
ZURICH	07	1022 E	1034		S11	W68	4043	12 D	1	3	1024		5.00	1.70		
ZURICH	07	1022 E	1038		N10	W43	4046	16 D	1	3	1025		2.00			
MOSCOW	07	1138 E	1155 D		N31	W44	4046	17 D	1					1.60	120	

COMMERCE - STANDARDS - BOULDER

E - LESS THAN
D - GREATER THAN
U - APPROXIMATE
& - PLUS
- - MINUS

These flare reports are addenda to the July 1957 flares published in CRPL-F 156 Part B, August 1957.

SOLAR FLARES

July 1957

OBSERVATORY	DATE July 1957	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
KIEV*	07	1159 E	1228 D		N08	W45	4046	29 D	1&			1.15				
KIEV	07	1206	1235	1215 U	N09	W44	4046	29	2			4.90			370	
MOSCOW	07	1302 E	1333 D		S38	W55	4044	31 D	2			11.20		2.70	160	
KIEV*	07	1301 E	1313 D		S33	W31	4044	12 D	1			1.97				
KIEV*	07	1303 E	1348 D		S35	W41	4044	45 D	1&			2.95				
KIEV	07	1306	1326 D	1308 U	S30	W32	4044	20 D	2			3.10			370	Slow S-SWF
KIEV	07	1306	1326 D	1312 U	S29	W38	4044	20 D	2			4.70			370	
MOSCOW	07	1306 E	1333 D		S38	W43	4044	27 D	1&			3.57		2.70	150	
KIEV*	07	1314 E	1343 D		S32	W39	4044	29 D	1			1.58				
TASHKENT	08	0411 E	0445	0426 U	N10	W53	4046	34 D	1			5.31		2.60	220	S-SWF
TASHKENT	08	0525	0643 D	0537 U	N13	W42	4046	78 D	2&			11.68		4.50	560	S-SWF
SIMEIZ	08	0551 E			N15	W41	4046					3.92			220	
MOSCOW	08	0915 E	1153 D		S30	W38	4044	158 D	1&			11.21		1.95	150	
KHARKOV	08	0915	1015 D	0920 U	N12	W57	4046	60 D	2			6.00				
MOSCOW	08	0917 E	1148 D		N11	W50	4046	151 D	1&			9.17		1.20	140	S-SWF
ZURICH	08	0938 E	0942		N10	W55	4046	4 D	1	3	0938		5.00	1.60		
TASHKENT	09	0257 E	0402	0344 U	N14	W53	4046	65 D	1			3.54		3.00		
TASHKENT	09	0512	0527	0514 U	N11	W66	4046	15	1			2.12		1.80		
ABASTUMANI	09	0645 E	0816 D		N12	E74	4059	91 D	1&			1.03		.60	175	Slow S-SWF
SIMEIZ	09	0724	0734	0727	N11	W74	4046	10	1			1.30		2.40	140	
NIZMIR	09	0935 E	0940 D		N14	W74	4046	5 D	1			1.00			200	
KHARKOV	09	1006	1035 D		S29	W58	4044	29 D	1			2.00				
MOSCOW	09	1032 E	1200 D		N06	W62	4046	88 D	1			2.55		2.40		
MOSCOW	09	1036 E	1200 D	1059 U	N04	E78	4059	84 D	1&			4.59		2.30	140	
MOSCOW	09	1145 E	1200 D		S14	E10	4051	15 D	2			11.72		1.90		
SYDNEY	10	0131	0200	0135	N11	W82	4046	29	1	2	0135	1.00	4.00			
TASHKENT	10	0152	0240	0157 U	N25	W59	4046	48	1			5.31		1.70		
ABASTUMANI	10	0600 E	0725		N14	W35	4048	85 D	1&			3.50			165	
SIMEIZ	10	0613 E			N14	W37	4048		1			2.24		2.00		
ABASTUMANI	10	0612	0725	0617	N15	W64	4046	73	1&			4.40		1.30		
SIMEIZ	10	0615 E			N14	W70	4046		1			2.80		2.00		
KIEV*	10	1245 E	1251		S13	E14	4052	6 D	1							
KIEV	10	1245	1317	1250 U	S13	E14	4052	22	1&			5.20			210	
R O EDIN	10	1421	1435	1427	S30	W71	4044	14	1			16.60				
ZURICH	12	1345 E	1409 D		S33	E26	4061	24 D	1	3	1345		4.00			
ABASTUMANI	13	0448 E	0800 D		S32	E19	4061	192 D	1			1.61		1.40	225	
SIMEIZ	13	0703 E	0719 D	0712 U	N28	E90	4065	16 D	1&			1.12		4.10		
KHARKOV	13	0901 E	0923 D	0927 U	N33	E87	4065	22 D	1							
KIEV	13	1210	1300 D	1213 U	S35	E14	4061	50 D	1			1.60			230	
ABASTUMANI	14	0649 E	0817 D		S33	E06	4061	88 D	1&			1.50			200	
ABASTUMANI	14	0653	0817 D	0719	N31	E85	4065	84 D	1&			4.84			175	
NIZMIR	15	0708 E	0716 D	0710 U	S32	W17	4061	8 D	1·			1.10			260	
MOSCOW	15	0713 E	0727 D		S36	W11	4061	14 D	1			1.02		1.40		
KIEV	15	1144	1200	1148 U	S34	W16	4061	16	2			2.90			480	
KIEV *	15	1145 E	1150 D	1146 U	S33	W14	4061	5 D	1			1.14				
KIEV	15	1147	1200	1151 U	S34	W10	4061	13	1&			2.20			280	
NIZMIR	16	0636 E	0713 D		N34	E61	4065	37 D	1&			7.00			290	

SOLAR FLARES

July 1957

OBSERVATORY	DATE July 1957	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
SIMEIZ	16	0733 E	0816 D		N32	E85	4065	43 D	1&			2.62		4.10	180	
NIZMIR	16	0734 E	0810 D	0757 U	N33	E84	4065	36 D	1&			1.40			310	Slow S-SWF
MOSCOW	16	0747 E	0845 D		N30	E80	4065	58 D	1			1.53		3.67	230	
MOSCOW	16	0809 E	1045 D		N26	W75	4068	156 D	1&			2.04		1.66	140	
NIZMIR	16	0836 E	0851 D	0842 U	S34	E31	4067	15 D	1			1.40			220	
SIMEIZ	16	0837 E	0856 D		S37	E33	4067	19 D	1			2.18		2.00	140	
MOSCOW	16	1201 E	1213 D		S42	E60	4071	12 D	1			1.53		3.01	130	
SYDNEY	17	0058	0108	0101	N26	E50	4065	10	1	3	0101	1.50	2.00			
SYDNEY	17	0112	0142	0117	N12	E31	4065	30	1	3	0117	4.00	5.00			
SYDNEY	17	0345	0356	0350	N30	E72	4065	11	1	3	0350	1.00	2.00			
TASHKENT	17	0546 E	0556		S36	E21	4067	10 D	1			3.54		2.60	180	
NIZMIR	17	0658	0713	0702	S23	E53	4070	15	1			2.40			300	
ABASTUMANI	17	0700	0755 D	0702	S20	E53	4070	55 D	1&			5.24			260	
NIZMIR	17	0702	0717	0711	S34	W35	4061	15	1			4.45			200	
NIZMIR	17	0833	0838	0834	S38	E22	4067	5	1&			2.00			330	
MOSCOW	17	0836 E	1329		S39	E22	4067	293 D	1&			5.10		3.76		
KHARKOV	17	1021 E	1036		N10	E15	4077	15 D	1			3.00				
SYDNEY	18	0039	0045	0040	S48	E39	4071	6	1	3	0040	1.00	2.00			
SYDNEY	18	0336	0413	0343	N23	E30	4065	37	1	1	0343	2.00	3.00			
TASHKENT	18	0340	0408	0345 U	N24	E28	4065	28	1&			7.43		2.40	270	
ABASTUMANI	18	0500 E	0800	0512 U	S37	E12	4067	180 D	2			2.18		1.50	350	
TASHKENT	18	0541 E	0550 D		S35	E09	4067	9 D	1			4.25		2.40	270	
MOSCOW	18	0732 E	1056		S38	E11	4067	204 D	1&			2.55		4.38	200	
NIZMIR	18	0734 E	0740	0734 U	S33	E22	4067	6 D	1			2.35			230	
SIMEIZ	18	0735 E	0739 D		S33	E08	4067	4 D	1			1.68		2.40		
MOSCOW	18	0852 E	1134 D	0916 U	S09	E19	4066	162 D	2&			15.29		3.20	150	
KHARKOV	18	0931	0948 D		S32	E05	4067	17 D	1							
MOSCOW	18	0934 E	1027 D		S35	E10	4067	53 D	1			1.53		3.01	130	
KHARKOV	18	1107 E			S38	E04	4067		1&							
KIEV *	18	1249 E	1259 D	1251 U	N26	E23	4065	10 D	1&			4.00				
KIEV	18	1249 E	1312	1252 U	N27	E24	4065	23 D	2-			3.00			300	G-SWF
MOSCOW	18	1302 E	1312 D		N26	E24	4065	10 D	1			1.77		3.27	200	
SYDNEY	18	2313 E	0030		S22	E25	4070	77 D	1	3	2314	4.00	5.00			
SIMEIZ	19	0827 E	0830 D	0828 U	S32	W68	4061	3 D	1			.87		1.70	140	
MOSCOW	19	0849 E	0909		N28	E38	4065	20 D	1			1.02		2.18		
KIEV	19	1130 E	1138	1130 U	S42	E24	4071	8 D	1			2.20			210	
KIEV	19	1200 E	1208 D	1201 U	S37	W05	4067	8 D	1&			3.20			230	
KIEV	19	1223	1240	1230 U	N29	E37	4065	17	1			1.50			190	
TASHKENT	20	0412	0456	0415 U	N30	E26	4065	44	1			4.25		1.60		
ABASTUMANI	20	0458 E	0803 D		N31	E29	4065	185 D	1&			3.00		1.60	156	
SIMEIZ	20	0645	0650	0646	N28	E02	4065	5	1			1.30		2.00	180	
NIZMIR	20	0808	0827	0811	N30	E28	4065	19	1			.60			320	
MOSCOW	20	0949 E	1001 D		N13	E76	4075	12 D	1			1.02		3.78		
MOSCOW	20	1042 E	1046 D		N32	E25	4065	4 D	1			.51		4.13		
MOSCOW	20	1413 E	1501 D		N31	E24	4065	48 D	1&			5.09		3.11	270	Slow S-SWF
TASHKENT	21	0325	0355	0328 U	N31	E17	4065	30	1&			8.85		3.20		
TASHKENT	21	0329 E	0357		N12	E69	4075	28 D	1			4.24		3.30		
TASHKENT	21	0337 E	0351 D		S24	E19	4070	14 D	1			3.89		2.10		
SIMEIZ	21	0633	0740	0658 U	N32	E16	4065	67	2			4.36		4.30	220	

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SOLAR FLARES

July 1957

OBSERVATORY	DATE July 1957	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
ABASTUMANI	21	0633	0750	0700	N32	E14	4065	77	2&			7.86		1.50	557	S-SWF
NIZMIR	21	0636 E	0718	0639 U	N30	E18	4065	42 D	1&			2.60			340	
MOSCOW	21	0707 E	0756 D		N28	E18	4065	49 D	2&			12.74		2.90		
ABASTUMANI	21	0722	0801 D	0750	N16	E70	4075	39 D	1&			1.75		1.70	388	
NIZMIR	21	0727	0803	0752	N10	E70	4075	36	1			2.20			250	
MOSCOW	21	0738 E	1259 D		N12	E64	4075	321 D	2			5.09		4.54	170	
SIMEIZ	21	0748	0800	0751	N12	E70	4075	12	1&			1.75		4.30	190	
MOSCOW	21	0903 E	1200 D		N31	E36	4073	177 D	1			1.02		1.00	150	
MOSCOW	21	1208 E	1302 D		N33	E29	4073	54 D	1&			5.10		3.03	150	
CLIMAX	21	1737	1750	1740	N22	W12	4065	13	1		1740	3.80				
SYDNEY	22	0128	0214	0149	N22	W19	4065	46	1	3	0149	2.00	2.00			
TASHKENT	22	0152 E	0209		N24	W19	4065	17 D	1			2.12		2.00	200	
SYDNEY	22	0201	0228 D	0206	N30	E09	4073	27 D	1	2	0206	3.00	3.00			
TASHKENT	22	0204	0229	0206 U	N31	W01	4065	25	1&			4.25		2.80	420	S-SWF
SYDNEY	22	0209	0304	0213	N10	E55	4075	55	1	3	0213	2.00	4.00			
TASHKENT	22	0210 E	0224 D		N11	E54	4075	14 D	1			3.19		2.30	240	
SYDNEY	22	0212	0252	0218	N21	W19	4065	40	1	3	0218	4.00	4.00			
TASHKENT	22	0245	0248		S09	W33	4066	3	1			2.12		3.70		
TASHKENT	22	0505	0526	0509 U	N12	E52	4075	21	1			5.31		2.60	230	
TASHKENT	22	0603	0613		N21	W21	4065	10	1			2.48		2.40		
NIZMIR	22	0606 E	0709	0625	N30	E04	4065	63 D	1&			1.55			300	
SIMEIZ	22	0619	0625	0621	N32	W07	4065	6	1			1.75		1.90	160	S-SWF
SIMEIZ	22	0620	0636	0622 U	N13	E54	4075	16	1			2.62			190	
TASHKENT	22	0625 E	0706	0629 U	N30	W04	4065	41 D	2			8.85		3.40	540	
SIMEIZ	22	0717	0702	0625	N30	E03	4065	45	1&			5.24		2.50		
NIZMIR	22	0751 E	0818	0758	N30	E25	4073	27 D	1			1.30			150	
NIZMIR	22	0824	0834	0826	N30	E04	4065	10	1			1.55			250	
SIMEIZ	22	0826	0840	0827 U	S24	E03	4070	14	1			1.75		2.20	170	
MOSCOW	22	0856 E	1141 D		N30	E23	4073	165 D	1			2.04		3.67		
MOSCOW	22	0943 E	1127 D		N23	W25	4065	105 D	1			1.02		2.94		
NIZMIR	22	0946 E	1008 D	0952	N30	E25	4073	22 D	1			1.05			220	
MOSCOW	22	0952 E	1149 D		N15	E51	4075	117 D	3			35.67		2.37	200	
MOSCOW	22	1011 E	1022 D		S06	W38	4066	11 D	1&			4.59		2.52		
MOSCOW	22	1030 E	1459 D		S21	E08	4070	269 D	2&			12.74		3.18	300	
MOSCOW	22	1114 E	1120 D		N31	E22	4073	6 D	2			5.10		4.12		
MOSCOW	22	1129 E			N30	W14	4065		1&			4.08		2.01		
KIEV	22	1207 E	1217 D	1209 U	S23	W00	4070	10 D	2&			6.10			470	
KHARKOV	22	1212 E	1220		S23	W03	4070	8 D	1			2.00				
NIZMIR	22	1258 E	1309 D	1303 U	S21	E07	4070	11 D	3			3.15			300	
R O EDIN	22	1300 E	1505	1316	S21	E09	4070	125 D	1&			11.40		2.96		Slow S-SWF
MOSCOW	22	1403 E	1410 D		N28	E02	4065	7 D	2&			8.66		4.50	180	
R O EDIN	22	1527	1539 D		S22	W01	4070	12 D	1			3.30		2.01		
ABASTUMANI	23	0456 E	0705 D	0542	N33	E09	4073	129 D	1&			4.36			287	
ABASTUMANI	23	0616	0750 D	0646	S22	W00	4070	84 D	1			3.49			357	
SIMEIZ	23	0623	0632	0625	S24	W08	4070	9	1			1.30			140	
SIMEIZ	23	0624	0707	0633 U	N26	E10	4073	43	1			.87		2.10	150	
KHARKOV	23	0642 E	0647		N25	W31	4065	5 D	1							
KHARKOV	23	0646 E	0700		S28	W13	4070	14 D	1							
NIZMIR	23	0709 E	0740	0715	S26	W11	4070	31 D	1			.90			300	
NIZMIR	23	0709 E	0722	0715	S22	E01	4070	13 D	1			1.05			200	
NIZMIR	23	0748 E	0753 D		N31	E09	4073	5 D	1			1.30			280	
MOSCOW	23	0834	1140 D	0859 U	S23	W08	4070	186 D	2			7.64		2.99	350	

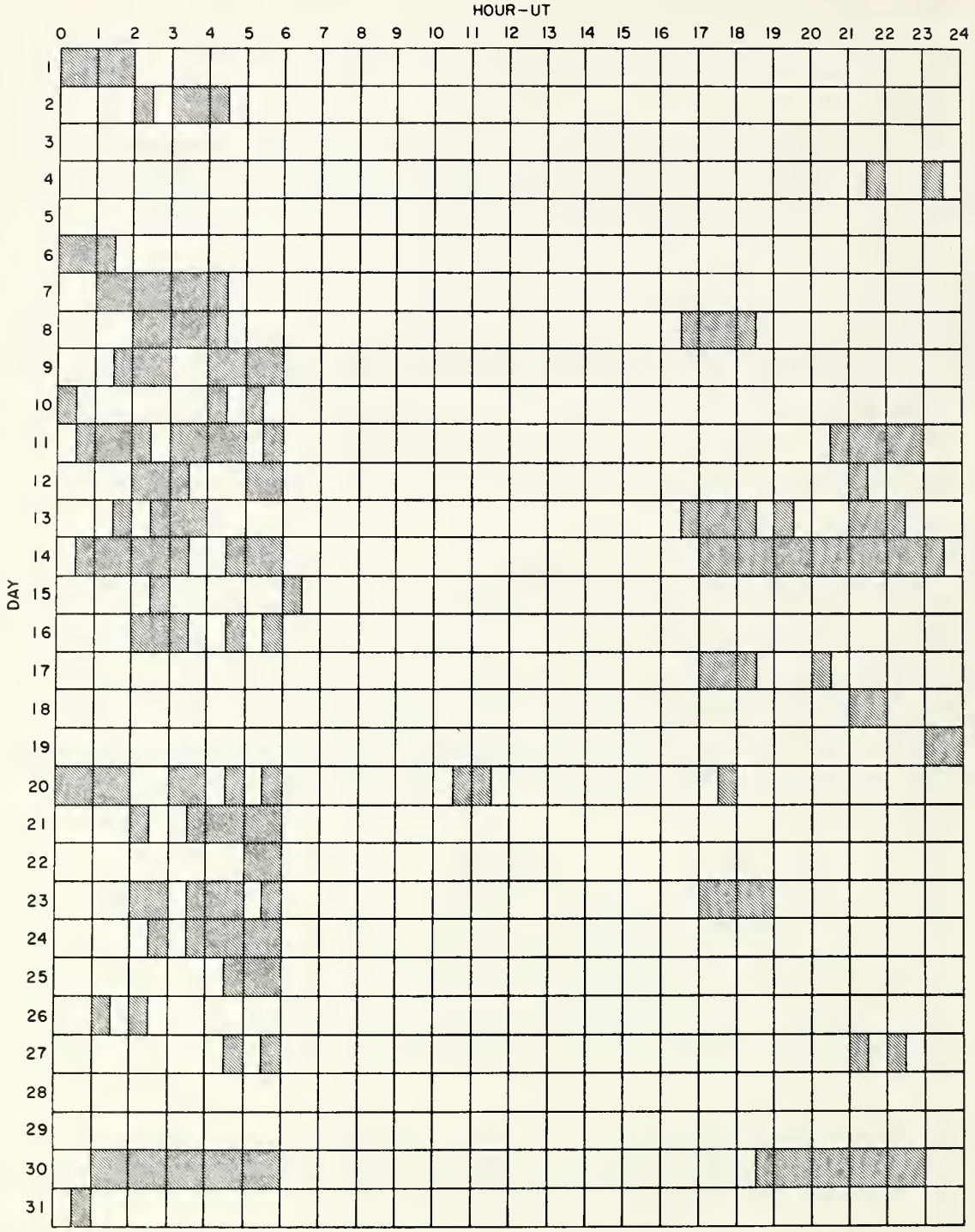
COMMERCE - STANDARDS - BOULDER

SOLAR FLARES

July 1957

OBSERVATORY	DATE July 1957	OBSERVED UNIVERSAL TIME			LOCATION			DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT
		START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	McMATH PLAGE REGION				TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	
SIMEIZ	23	0843	0900	0848	S23	W11	4070	17	1			1.30			150	G-SWF
SIMEIZ	23	0847	0911	0851	S26	W11	4070	24	1			1.30			160	
NIZMIR	23	0900 E	0924 D	0905	S25	W09	4070	24 D	1&			3.50			300	
SIMEIZ	23	0905	0923	0907	N08	E41	4075	18	1			3.49			170	
NIZMIR	23	0916 E	0924	0919	N13	E39	4075	8 D	1			1.70			240	
MOSCOW	23	1053	1157 D		N33	W16	4065	64 D	1&			7.13		2.58	160	
KIEV	23	1215 E	1232	1216 U	S27	W13	4070	17 D	1			1.80			190	
SYDNEY	24	0210	0226 D	0216	N23	W37	4065	16 D	1	3	0216	2.00	2.00			
ABASTUMANI	24	0505 E	0800 D		S23	W11	4070	175 D	1			2.65			265	
ZURICH	24	0849	0903	0852	N32	W06	4073	14	1	3	0852		2.00	1.70		
NIZMIR	24	0910	0951	0921	N34	W01	4073	41	1			.55		3.20		
MOSCOW	24	0911 E	1138 D		N12	W69	4077	147 D	2			9.17		2.16		
KHARKOV	24	0915	1010		N34	E10	4073	55	1							
KHARKOV	24	0948 E	1100 D		N10	E33	4075	72 D	1							
MOSCOW	24	0956 E	1147 D		N35	W05	4073	111 D	1&			3.06		2.30	160	
MOSCOW	24	1036 E	1113 D		S05	W64	4066	37 D	1			5.10		1.94	130	
KHARKOV	24	1057	1202		N11	E34	4075	65	1							
MOSCOW	24	1121 E	1132 D		N09	E30	4075	11 D	1			1.53		2.26	160	
SYDNEY	24	2322	2349 D	2329	N21	W58	4065	27 D	2	3	2329	3.00	6.00			
NIZMIR	25	0650 E	0721	0701	N31	W37	4065	31 D	1			2.20			220	
SIMEIZ	25	0655	0755	0700	N32	W37	4065	60	1&			7.50		1.70	160	S-SWF
TASHKENT	25	0659	0720 D	0702 U	N30	W37	4065	21 D	1&			6.02		2.30	330	
NIZMIR	25	0734	0839 D	0805 U	N33	W17	4073	65 D	1			2.00			180	
SIMEIZ	25	0759	0836	0802	N32	W19	4073	37	1			1.75			150	
MOSCOW	25	0812 E	0907 D		N33	W14	4073	55 D	1&			4.59		2.30	200	
NIZMIR	26	0952 E	1008	1007	S25	W50	4070	16 D	1			1.30			200	
SYDNEY	27	0229	0310	0237	S25	W85	4070	41	1	3	0237	1.50				
SIMEIZ	27	0633 E	0742 D		N18	W11	4075	69 D	1			3.49		2.00	140	
ABASTUMANI	27	0655 E	0801 D	0700 U	S28	W59	4070	66 D	2			2.62			500	S-SWF
ABASTUMANI	28	0655 E	0801 D	0655 U	N17	W11	4075	66 D	2-			4.36			516	
MOSCOW	28	0927 E	1109 D	1050 U	S32	W66	4070	102 D	1&			5.10		3.20	160	
KHARKOV	28	1033 E	1103	1037	S36	E60	4082	30 D	2			6.00				S-SWF
KIEV	28	1240 E	1302	1245 U	N15	W18	4075	22 D	1			2.20			220	
KIEV	28	1304	1307 D	1305 U	N24	W22	4075	3 D	1			2.00			210	
ABASTUMANI	29	0508 E	0805 D	0559 U	S28	E54	4082	177 D	1&			1.75			279	Slow S-SWF
ABASTUMANI	30	0525 E	0757	0737 U	N20	E70	4083	152 D	1			5.24		1.50	156	
ABASTUMANI	30	0525 E	0727	0614 U	N17	W65	4075	152 D	1			3.93		2.10	220	
ABASTUMANI	30	0646	0655	0647 U	S31	E21	4082	9	1			1.75		1.90	208	
SIMEIZ	30	0836 E	0838 D	0845 U	N09	W68	4075	9 D	1			1.75		2.32	170	
MOSCOW	31	0849 E	0925 D	0903 U	N13	W64	4075	36 D	1&			3.57		2.15	170	
KHARKOV	31	0855 E	1210 D		N18	W75	4075	195 D	1			3.00				
KHARKOV	31	0943 E	1020 D		N11	W78	4075	27 D	1			2.00				
KHARKOV	31	1029 E	1055 D		N12	W65	4075	26 D	1			2.00				
KIEV	31	1047 E	1101	1047 U	N22	W67	4075	14 D	1			2.80			230	
KIEV	31	1150	1250	1157 U	N13	W74	4075	60	1			2.10			280	
KIEV	31	1154	1157	1155 U	S33	E26	4082	3	1			1.50			220	

INTERVALS OF NO FLARE PATROL OBSERVATIONS
July 1957



Times indicated are accurate to the nearest half hour.

Stations included:

Anacapri (Swedish)
Arcetri
Climax
Dunsink
Greenwich Royal Observatory, Herstmonceux
Hawaii
Huancayo
Kodaikanal
Krasnaya Pakhra
Meudon
Mitaka
Nizamiah
Ondrejov
Ottawa
Royal Observatory, Edinburgh
Sacramento Peak
Simeis
Sydney
Uccle
U. S. Naval Research Laboratory
Utrecht
Zürich

IONOSPHERIC EFFECTS OF SOLAR FLARES

(SHORT-WAVE RADIO FADEOUTS)
APRIL 1958

April 1958	Start UT	End UT	Type	Wide Spread Index	Importance	Observation Stations	Known Flare, UT CRPL-F
1	1020		G-SWF	1	2	KU	1018
1	1055	1133	S-SWF	5	2+	NE, PR, SW, CW***	1052E
1	1633	1655	S-SWF	5	2	BE, HU, JU, MC, PR	1630
1	2350	0030	S-SWF	5	2	AD, CA, TO	
2	0421	0455	Slow-S-SWF	5	2	CA, KO, OK, TO	0427
2	0459	0613	S-SWF	5	2+	AN, CA, KO, NE, OK, TO	0502E
2	1507	1537	G-SWF	4	2	MC, PR, PU	1516E
2	1545	1607	S-SWF	5	2	BE,HU, JU, KU, MC, NE, PR, PU, SW, TO, CW**	1533E
2	1610	1620	S-SWF	5	1	BE, HU, MC, PR, PU, TO, CW*	1605E
2	1650	1710	S-SWF	4	1+	BE, HU, MC, PR	1641
2	1810	1838	S-SWF	5	1+	BE, HU, MC, PR	1807
2	1952	2022	S-SWF	5	2	AD, AN, BE, HU, MC, PR, WS	1951
3	0419	0500	S-SWF	5	2	NE, OK, CW+	0412E
3	0820	0900	S-SWF	3	2	PU, CW***	0817
3	1440	1515	Slow-S-SWF	5	1+	BE, HU, MC, NE, PR, PU, WS	1435
3	1833	1900	Slow-S-SWF	5	1	AN, BE, HU, MC, PR	1828
4	0318	0339	S-SWF	4	2	NE, TO	
5	0805	0856	S-SWF	1	1	NE	0806
5	1352	1423	Slow-S-SWF	4	2-	BE, MC, PR	1352
5	1930	2000	Slow-S-SWF	5	1	BE, HU, MC, PR, WS	1925
5	2020	2100	G-SWF	5	1-	BE, HU, MC, PR, WS	2020
6	1057	1117	Slow-S-SWF	3	2	JU, NE	*
6	1703	1723	Slow-S-SWF	3	1	BE, MC, PR	
7	0730	0750	Slow-S-SWF	5	2	OK, PU	
7	1016	1125	S-SWF	5	2+	BE, MA, NE, SW, CW***	1016E
7	2342	0010	S-SWF	3	1+	AD, AN	2336
8	0306	0415	S-SWF	3	1+	OK, TO	0301
9	0823	0902	S-SWF	3	1+	NE, PU	0852E
9	1435	1520	G-SWF	4	1+	BE, MC, PR, PU	1435
10	0040	0112	S-SWF	5	2	AD, CA, OK, TO	0052E
10	0841	0930	S-SWF	1	1	NE	0859
10	1616	1700	S-SWF	5	2	BE, HU, MC, NE, PR, PU, WS	1548E
10	2218	2258	S-SWF	5	2+	AD, AN, BE, CA, MC, PR, TO, WS	2217
11	0147	0211	Slow-S-SWF	5	1	AD, CA, OK	
11	0515	0540	S-SWF	5	1+	CA, KO, NE, OK, TO, CW+	
11	0820	0834	S-SWF	5	2-	JU, KO, PU	
11	1150	1210	S-SWF	5	1	BE, DA, PU	
11	1255	1308	S-SWF	1	2	PU	*
11	1333	1411	S-SWF	5	3-	BE,DA,HU,JU,MA,MC,NE,PR,PU,SW,WS,RCA*,CW***	
11	1603	1616	Slow-S-SWF	3	1	BE, MC, PR	
15	0709	0731	S-SWF	4	2	KO, PU	0709E
15	0933	0955	S-SWF	3	2+	JU, PU	0925E
16	0534	0608	S-SWF	5	2+	JU, KO, OK, NE, PU, TO	
16	1014	1052	S-SWF	3	2	NE, PU	1016
22	0837	0852	S-SWF	1	2	PU	0827E
24	1900	1950	G-SWF	3	1	BE, MC, PR	
26	1052	1105	S-SWF	5	2-	BE, JU, KU, NE, PR, PU, SW, CW***	1047
27	0753	0806	S-SWF	1	2	PU	0745
27	1455	1530	G-SWF	3	1-	BE, MC, PR	1458
28	0003	0025	S-SWF	5	1	AD, CA, OK	0002E

IONOSPHERIC EFFECTS OF SOLAR FLARES

(SHORT-WAVE RADIO FADEOUTS)

APRIL 1958

April 1958	Start UT	End UT	Type	Wide Spread Index	Impor-tance	Observation Stations	Known Flare, UT CRPL-F
28	0527	0607	S-SWF	5	2	JU, OK, TO	0527E
29	1152	1222	Slow-S-SWF	4	1+	MA, NE, PR	1128
29	1855	2020	Slow-S-SWF	5	3-	BE, HU, MC, PR, WS	1855E
30	0805	0909	S-SWF	3	2	JU, PU	0804
30	0911	0928	S-SWF	1	2	PU	0905
30	1547	1610	S-SWF	5	1	BE, HU, MC, PR, PU	1545
30	1624	1640	S-SWF	2	1-	MC, PR	1615E
30	1652	1715	S-SWF	4	1-	AN, HU, MC, PR	1650
30	1835	1915	Slow-S-SWF	5	2	AD, AN, HU, MC, PR, WS	
30	1935	1955	S-SWF	4	1	MC, PR, WS	1930

*No known flare patrol at this time.

CA=Canberra, Australia
DA=Darmstadt, G.F.R.
JU=Juhlesruh, G.D.R.
KO=Kodaikanal
KU=Kuhlungsborn
MA=Madrid, Spain
NE=Nederhorst den Berg, Netherlands.
PU=Prague, Czech.
SW=Enköping, Sweden
TO=Hiraiso Radio Wave Observatory, Japan
CW* =Cable and Wireless, Barbadoes
CW** =Cable and Wireless, Somerton, England
CW***=Cable and Wireless, Brentwood, England
CW+ =Cable and Wireless, Hong Kong
RCA* =RCA Communications Inc., Riverhead, N.Y.

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES
MAY 1958

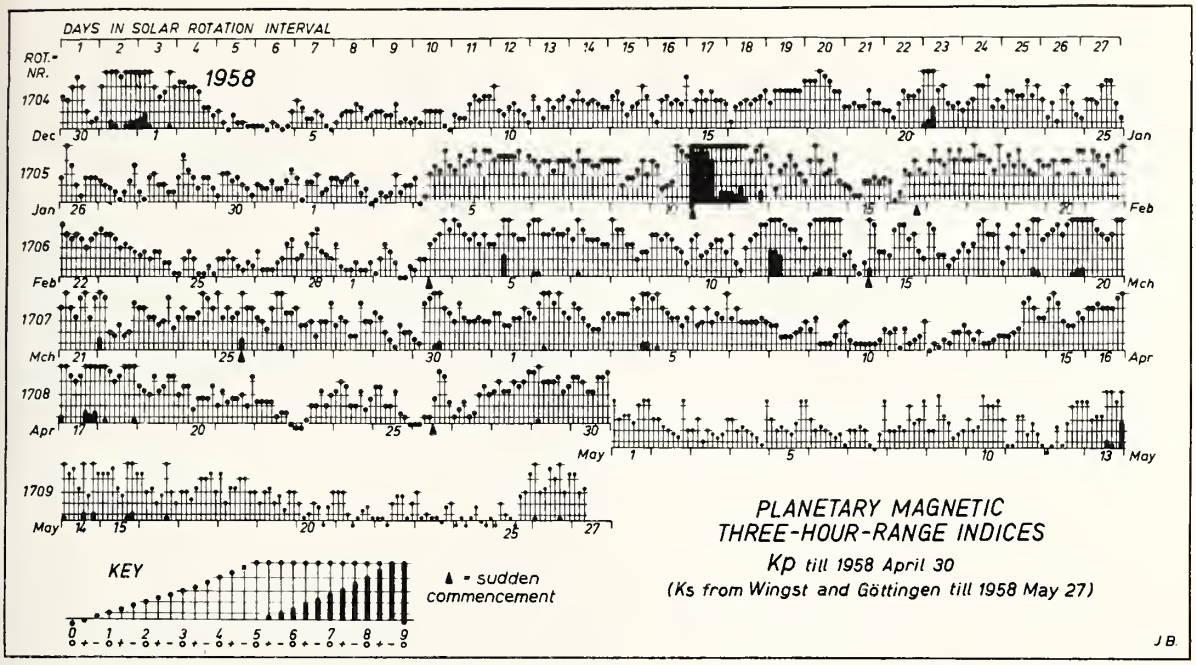
OTTAWA — 2800 MC

May 1958	Type*	Start UT Hrs:Mins	Duration Hrs:Mins	Maximum Time UT Hrs:Mins	Maximum Peak Flux	Remarks
1	2 Simple 2	10 40	2.5	10 41	70	
1	6 Complex	14 07	14	14 14.5	14	
1	3 Simple 3	16 45	40	17 05	7	
1	3 Simple 3 A	17 45	2 30	indet.	13	
	2 Simple 2	17 51	1.8	17. 51.4	10	
	2 Simple 2	18 12	8	18 15	11	
1	3 Simple 3 A	21 02	15	21 07	9	
	2 Simple 2	21 02	3	21 03	19	
1	3 Simple 3 A	21 27.9	>2 32	21 57	25	
	2 Simple 2 f	21 27.9	5	21 28.5	136	
2	1 Simple 1	22 26	4	22 28	7	
3	2 Simple 2	13 04.3	6	13 05.5	16	
3	6 Complex	19 53	9	19 54.2	18	
3	6 Complex	22 08	8	22 09	37	
3	2 Simple 2	23 31.5	2	23 32.2	15	in interference
4	6 Comples f	16 41.8	8	16 43.9	64	
	4 Post increase		10		7	
4	6 Complex	20 56	4	20 57.5	19	
4	2 Simple 2	22 09.5	6	22 11.2	13	
5	2 Simple 2	12 06.5	3	12 07.5	10	
5	6 Complex f	13 26.2	20	13 29	25	
5	3 Simple 3 A	18 15	>5 45	indet.	25	
	1 Simple 1	18 19	2.5	18 20	5	
	6 Complex f	20 34.7	7	20 36.5	580	
	4 Post increase		15		8	
6	1 Simple 1	16 53.3	1	16 53.8	4	
7	2 Simple 2	20 07.9	4	20 09	12	
7	1 Simple 1	21 55	1	21 55.4	7	
8	2 Simple 2	14 37.7	1	14 38.1	8	
10	1 Simple 1	21 54.5	3	21 55.8	6	
11	2 Simple 2	21 00.8	1.5	21 01.3	12	
12	6 Complex	14 05	5	14 05.5	7	
12	6 Complex	23 50.8	2.5	23 51.4	53	in interference
13	2 Simple 2	16 20.3	1	16 20.8	24	
	4 Post increase		11		5	
13	2 Simple 2	18 00.5	3	18 02	9	
17	3 Simple 3 A	13 50	10	indet.	5	
17	8 Group (2)	13 50.8	5.7			
	2 Simple 2	13 50.8	2.5	13 51.6	16	
	2 Simple 2	13 54.5	2	13 55	10	
17	8 Group (2)	18 53.5	8.9			
	6 Complex	18 53.5	4.5	18 56.4	11	
	2 Simple 2	19 00.4	2	19 00.9	9	
17	3 Simple 3 A	21 36	13	21 40	11	
	8 Group (2)	21 38	2.8			
	2 Simple 2	21 38	1.5	21 38.7	15	
	1 Simple 1	21 40.3	0.5	21 40.5	6	
18	2 Simple 2 f	12 23	8	12 25.8	40	
18	2 Simple 2 f	19 23.5	5	19 25	15	
21	2 Simple 2	16 59.3	2	17 00	8	
25	3 Simple 3 A	18 20	35	18 30	5	
	2 Simple 2 f	18 22.5	1.5	18 23	18	
26	6 Complex	17 41.5	3.5	17 42	43	
	4 Post increase		25		6	
30	1 Simple 1	22 23.2	1	22 23.7	7	

GEOMAGNETIC ACTIVITY INDICES

APRIL 1958

Apr. 1958	C	Values Kp Three hour Gr. interval 1 2 3 4	5 6 7 8	Sum	Ap	Final Selected Days
1	1.0	4- 4- 3- 3-	3+ 3+ 4o 4-	27o	19	Five
2	1.2	3+ 4+ 5+ 5o	4+ 5o 4- 3+	34+	34	Quiet
3	1.0	4+ 4o 3+ 3-	2+ 2+ 3+ 4-	26o	18	
4	1.3	3+ 4- 4- 4-	5- 4o 6- 6-	34+	36	10
5	1.1	5- 5+ 4o 4-	3+ 3+ 3- 3+	30+	26	11
						12
6	1.2	4o 3- 3o 4o	3o 4- 3+ 5o	29-	23	13
7	0.8	3+ 4o 3o 3o	3o 3o 3+ 3o	26-	17	22
8	0.4	3- 3- 2- 2-	2- 2o 2+ 3o	18-	9	
9	0.3	2+ 3+ 1o 1o	1o 2- 3- 3o	16o	9	
10	0.1	1+ 1o 1o 1o	1o 1o 1+ 2+	10o	5	
11	0.4	2o 2+ 1- 2+	1o 1+ 2- 3o	14+	7	Five
12	0.1	0+ 1o 1- 1+	1o 2o 2o 3-	11o	6	Disturbed
13	0.2	2o 1+ 2o 1o	1o 1+ 2- 2-	12o	6	
14	1.0	2- 2o 2+ 4+	5- 4o 3+ 3+	26-	20	2
15	1.0	5- 5o 4+ 3o	3- 3- 4- 3+	29+	25	4
						16
16	1.3	4o 4o 4+ 4o	4o 4o 5- 5o	34o	32	17
17	1.5	6- 5o 4+ 4o	4+ 6o 6- 6o	41o	54	18
18	1.4	5o 5+ 5- 4o	4+ 5o 5o 5+	39-	44	
19	1.1	4- 3+ 3o 4+	3+ 4- 4+ 4+	30o	24	
20	0.9	3o 4- 4- 2-	3- 3- 3- 4-	24-	15	
21	0.8	2o 3+ 2+ 3-	3- 3o 2o 4+	22+	14	Ten
22	0.2	2+ 2+ 2+ 2+	1o 1+ 1+ 0+	13+	6	Quiet
23	0.4	0o 0o 1- 2o	2o 3+ 2o 3o	13o	7	
24	0.7	3+ 4o 4- 2o	2o 3+ 2- 3-	23-	15	8
25	0.5	4- 4- 2o 2o	3+ 1+ 1o 0+	17+	11	9
						10
26	0.8	0+ 0+ 1o 1o	3- 5- 4+ 2+	17-	13	11
27	0.6	1o 2- 2+ 1o	1+ 3o 4- 3o	17o	10	12
28	1.1	3+ 4o 3+ 3+	4o 4- 4o 5-	30+	24	13
29	1.2	5- 5+ 4o 4o	4o 4+ 3+ 4-	33+	31	22
30	1.2	4+ 4+ 4o 3+	3+ 4+ 4+ 5-	33-	29	23
						25
						27
Mean:	0.83			Mean:	20	



NOTE

September 1957, with its record average Zurich relative sunspot number 244, provided also a record in magnetic activity. Six heavy storms with sudden commencements. The monthly average of the daily planetary amplitudes, Ap, in the usual unit 2 gamma, was 49. The next highest monthly averages in the available series (1932/33, and 1937 to date) were 40 (Sept 1951) and 37 (March 1940). September had 3 days with Cp = 2.0, and 5 days with Cp = 1.9. September 4 brought one of the rare Kp = 9o (the five preceding cases of 9o occurred 1941 March 1, July 5 and Sept 19, and 1946 July 27 and Sept 22). The number of three-hour-intervals with high Kp-indices in the 6 months named were·

	Number of intervals with Kp = 9o	9-	8+
1941 March	1	2	.
1941 July	1	3	.
1941 Sept.	1	7	1
1946 July	1	3	.
1946 Sept.	1	1	2
1957 Sept.	1	6	6

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

NORTH ATLANTIC

APRIL 1958

Apr. 1958	North Atlantic 6-hourly quality figures				Short-term forecasts issued about one hour in advance of:				Whole day index	Advance forecasts (J-reports) for whole day; issued in advance by:			Geomagnetic K_{Fr}	
	00 to 06	06 to 12	12 to 18	18 to 24	00	06	12	18		1-4 days	4-7 days	8-25 days	Half (1)	Day (2)
1	6-	5+	7-	7-	6	5	6	6	6o	6	6		3	3
2	6o	5+	6+	7-	5	5	6	6	6o	6	6		(4)	(4)
3	6-	6+	7-	7-	7	6	7	7	6+	6	6		3	3
4	6+	7-	6+	6+	6	6	7	6	6+	6	6		3	(4)
5	5o	5o	7-	6+	6	4	6	6	6-	6	6		(4)	3
6	6o	6-	7-	7-	6	6	7	6	6+	6	6		3	3
7	6+	5+	6+	7-	6	6	7	6	6o	6	6		3	3
8	7-	6-	7-	6+	6	6	7	7	6+	6	6		2	2
9	7-	6+	7-	6+	6	6	7	7	6+	6	6		2	3
10	7-	6+	7-	7-	6	7	7	7	7-	5	6		1	2
11	7o	6+	7-	7+	7	7	7	7	7-	7	5		2	2
12	7+	6+	7-	7o	7	6	7	7	7-	7	6		1	2
13	7-	7-	7o	7o	7	6	7	7	7o	7	6		2	2
14	7-	7-	7-	7-	7	7	7	6	7-	7	6		3	(4)
15	6o	5+	6+	7-	6	6	6	6	6o	6	7		(4)	3
16	6-	5-	6+	6o	6	5	6	6	6-	7	7		3	(4)
17	5o	5-	6-	6-	6	4	5	6	5+	7	7		(5)	(4)
18	4+	5o	6-	6o	5	4	6	6	5o	6	7		(4)	(4)
19	6-	6-	6+	6o	5	5	6	6	6o	6	7		3	3
20	5+	6-	6+	6+	6	6	6	6	6o	6	7		3	3
21	7-	6-	6+	7-	6	6	7	6	6+	6	7		3	3
22	7-	6-	7-	7-	7	6	7	7	6+	6	7		3	1
23	7-	6+	7-	7-	7	6	7	7	7-	6	7		1	3
24	6+	6-	6+	6+	7	6	7	6	6+	7	7		3	2
25	6+	6o	7-	7-	7	6	7	7	6+	7	7		2	2
26	7o	7+	7o	7-	7	7	7	6	7o	7	7		1	3
27	7o	7o	7-	7o	6	6	7	7	7o	7	7		2	2
28	7-	6-	6o	6o	7	6	6	6	6o	7	7		3	(4)
29	5+	5-	6-	6o	6	5	6	5	5+	6	7		(4)	3
30	5+	5o	6-	6+	6	4	6	6	6-	7	7		(4)	(4)

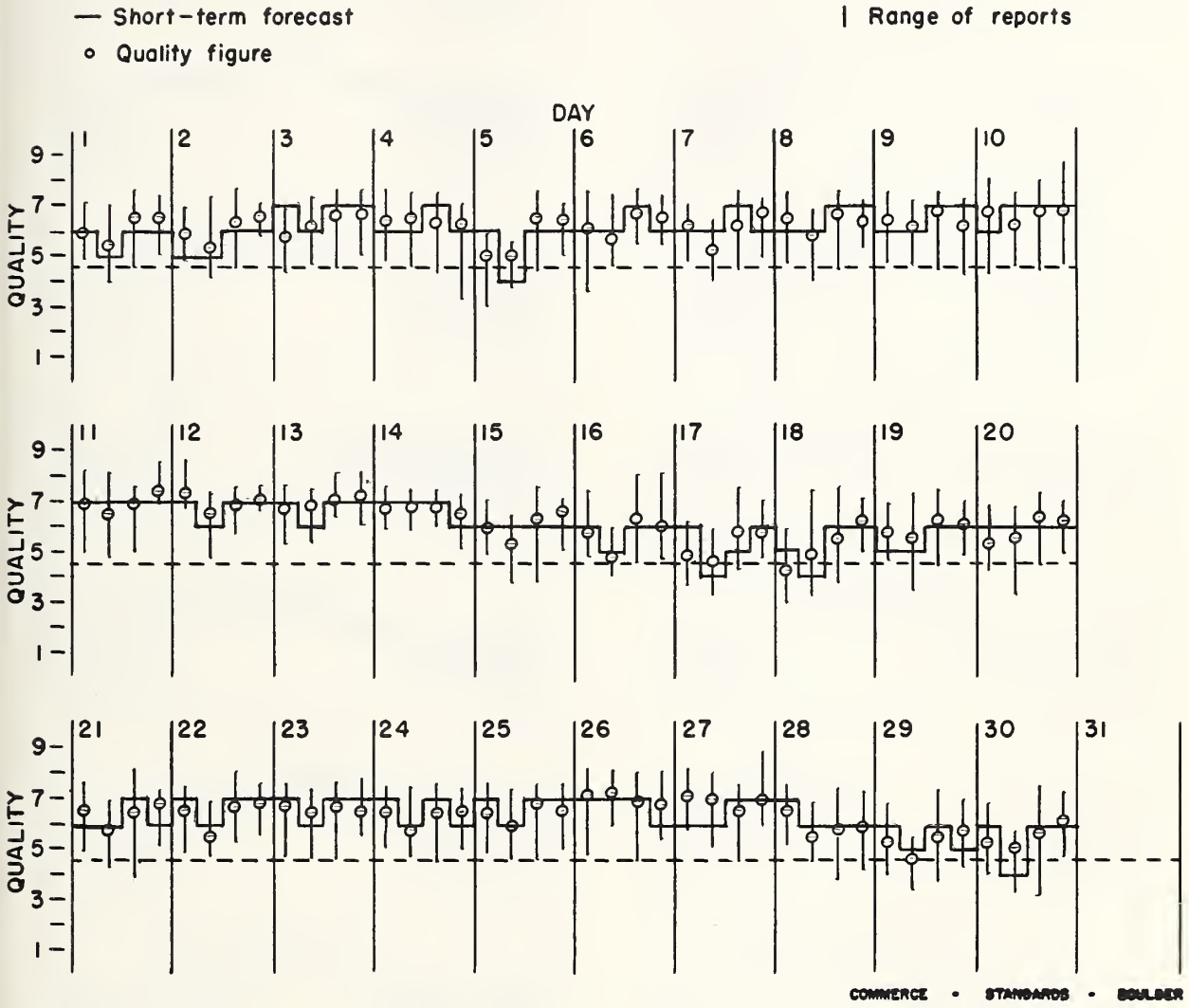
Score:			00	06	12	18	1-4 days	4-7 days
Quiet Periods	P		14	18	23	19	20	12
	S		15	12	7	11	8	14
	U		0	0	0	0	2	4
	F		0	0	0	0	0	0
Disturbed Periods	P		0	0	0	0	0	0
	S		1	0	0	0	0	0
	U		0	0	0	0	0	0
	F		0	0	0	0	0	0

( ) represent disturbed values.

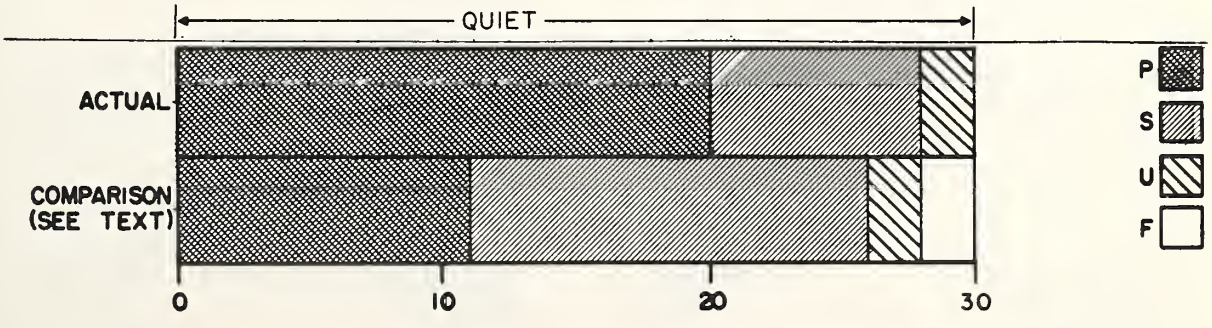
CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

NORTH ATLANTIC

APRIL 1958

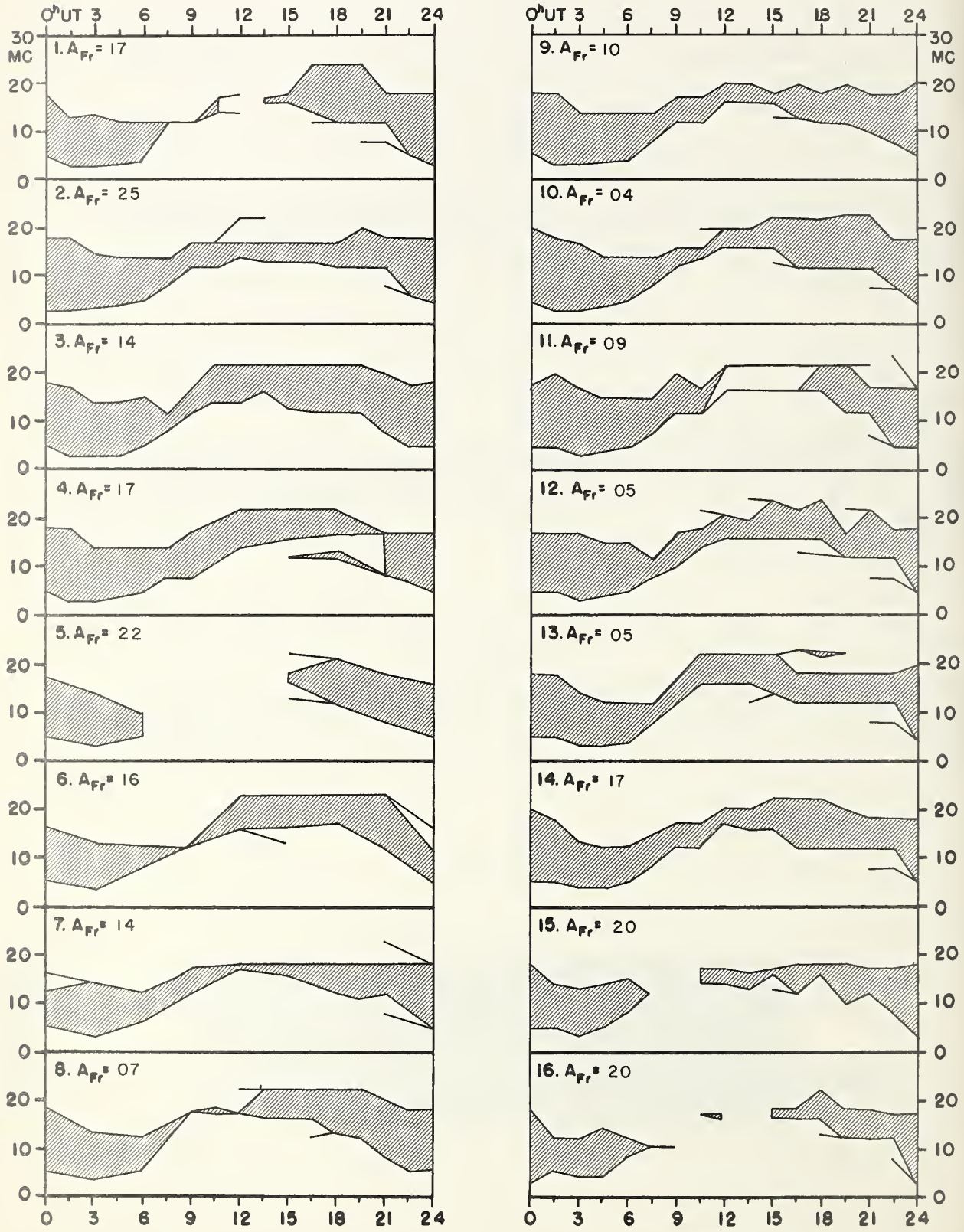


OUTCOME OF ADVANCED FORECASTS 1 TO 4 DAYS AHEAD

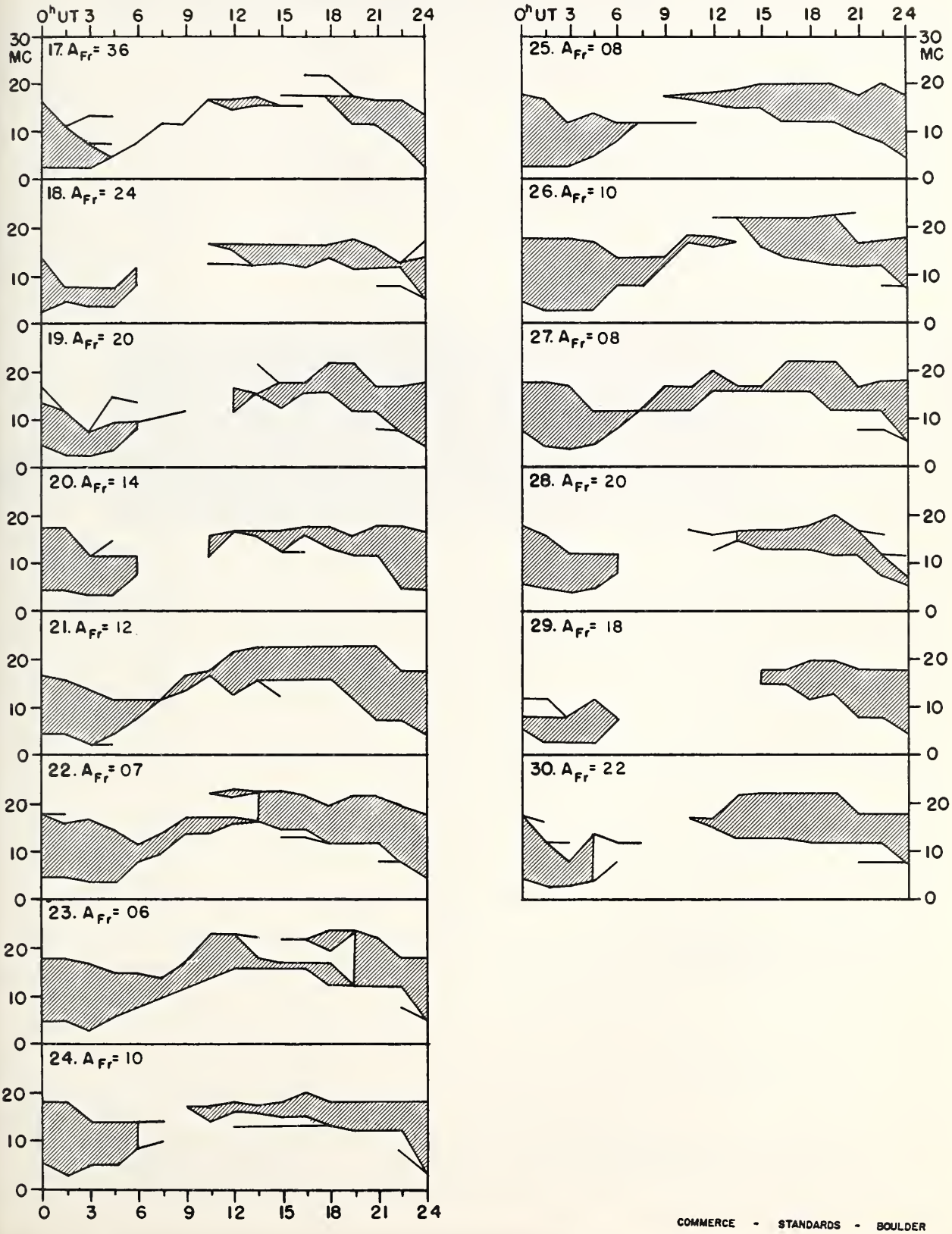


USEFUL FREQUENCY RANGES -- NORTH ATLANTIC PATH

APRIL 1958



APRIL 1958



COMMERCE - STANDARDS - BOULDER

Adapted from Observations by Deutsches Bundespost

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

NORTH PACIFIC

APRIL 1958

Apr. 1958	North Pacific 8-hourly quality figures			Short-term forecasts issued at			Whole day index	Advance forecasts (Jp reports) for whole day; issued in advance by:			Geomagnetic K_{S1}	
	03 to 11	11 to 19	19 to 03	02	10	18		1-4 days	4-7 days	8-25 days	Half Day (1)	Day (2)
1	6	6	6	6	6	6	6	4	5		2	3
2	5	5	6	6	4	6	6	5	5		(5)	3
3	6	5	6	6	5	6	6	5	5		(4)	2
4	6	5	5	6	5	6	5	5	5		(4)	(4)
5	6	5	5	5	5	5	5	5	6		(5)	(4)
6	5	5	6	5	4	6	5	5	6		(4)	(4)
7	6	5	6	6	5	6	6	5	6		(4)	2
8	6	6	6	6	6	6	6	6	6		2	2
9	6	5	6	6	6	6	6	6	6		2	1
10	6	6	6	6	6	7	6	6	6		0	1
11	6	6	7	6	6	6	7	6	6		1	2
12	7	6	6	6	6	7	6	6	7		0	2
13	6	6	6	6	6	6	6	6	7		1	1
14	6	6	5	6	6	6	6	6	7		2	(4)
15	5	6	5	6	6	6	5	6	7		(4)	2
16	5	5	5	6	6	6	5	6	7		(4)	(4)
17	5	5	5	5	5	4	5	6	7		(5)	(5)
18	5	4	6	5	5	5	5	6	7		(5)	(5)
19	5	5	6	5	5	5	5	5	7		(4)	3
20	6	5	6	6	6	6	6	5	7		3	2
21	6	6	6	6	6	6	6	5	7		3	2
22	6	6	6	6	6	6	6	5	7		3	1
23	6	6	6	6	7	6	6	6	5		0	2
24	6	6	6	6	6	5	6	6	6		(4)	2
25	6	6	6	6	6	6	6	6	6		3	1
26	6	7	6	7	7	7	7	6	6		0	3
27	6	6	6	7	7	6	6	6	6		1	2
28	6	5	6	6	5	6	6	6	6		(4)	(4)
29	4	5	6	5	4	5	5	7	6		(6)	(4)
30	5	6	6	5	5	6	6	4	7		(4)	(4)

Score:								
Quiet Periods	P	22	20	17	15	9		
	S	7	9	13	12	16		
	U	0	0	0	1	5		
	F	0	0	0	2	0		
Disturbed Periods	P	0	0	0	0	0		
	S	1	1	0	0	0		
	U	0	0	0	0	0		
	F	0	0	0	0	0		

( ) represent disturbed values.

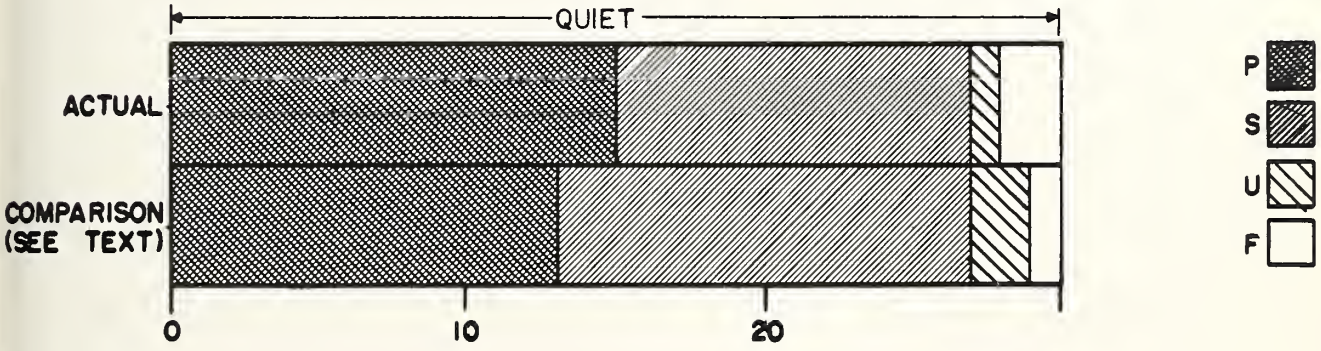
COMMERCE - STANDARDS - BOULDER

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

NORTH PACIFIC

APRIL 1958

OUTCOME OF ADVANCED FORECASTS 1 TO 4 DAYS AHEAD



ALERT PERIODS AND SPECIAL WORLD INTERVALS

Alert Issued Ends 1600 UT 1600 UT	SWI	A_{Be} On Days of Alert Period (SWI Underlined)	Number of Flares of IMP ≥ 2 Reported Promptly on Days of Alert Period
1958			
Apr 30-May 05		23-19-08-06-09-10	1-3-2-1-0-5

COMMERCE - STANDARDS - BOULDER